

**THE VALUE OF AUDIO-VISUAL AIDS
IN THE TEACHING OF SOCIAL STUDIES**

GRACE WHITE



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THE VALUE OF AUDIO-VISUAL AIDS IN THE TEACHING OF SOCIAL STUDIES

A Project Using Visual Aids in the Teaching
of Social Studies to Latin American children
in the Fifth Grade

Presented to
the Faculty of the Department of Education
Florida Southern College
Lakeland, Florida

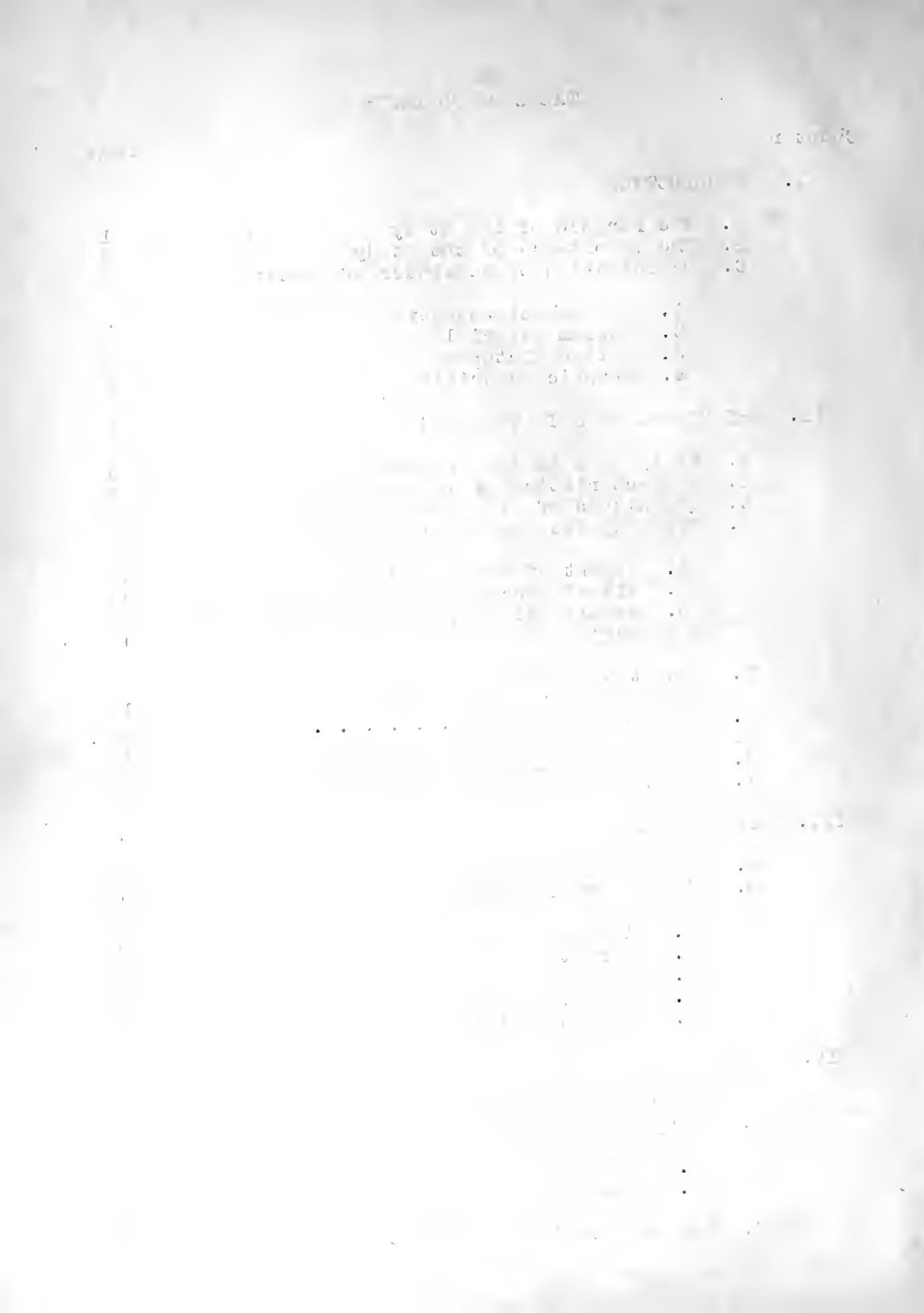
GRACE WHITE

Submitted in Partial Fulfillment
of the Requirements for the Degree
of Master of Arts in the
Graduate School
of Florida Southern College

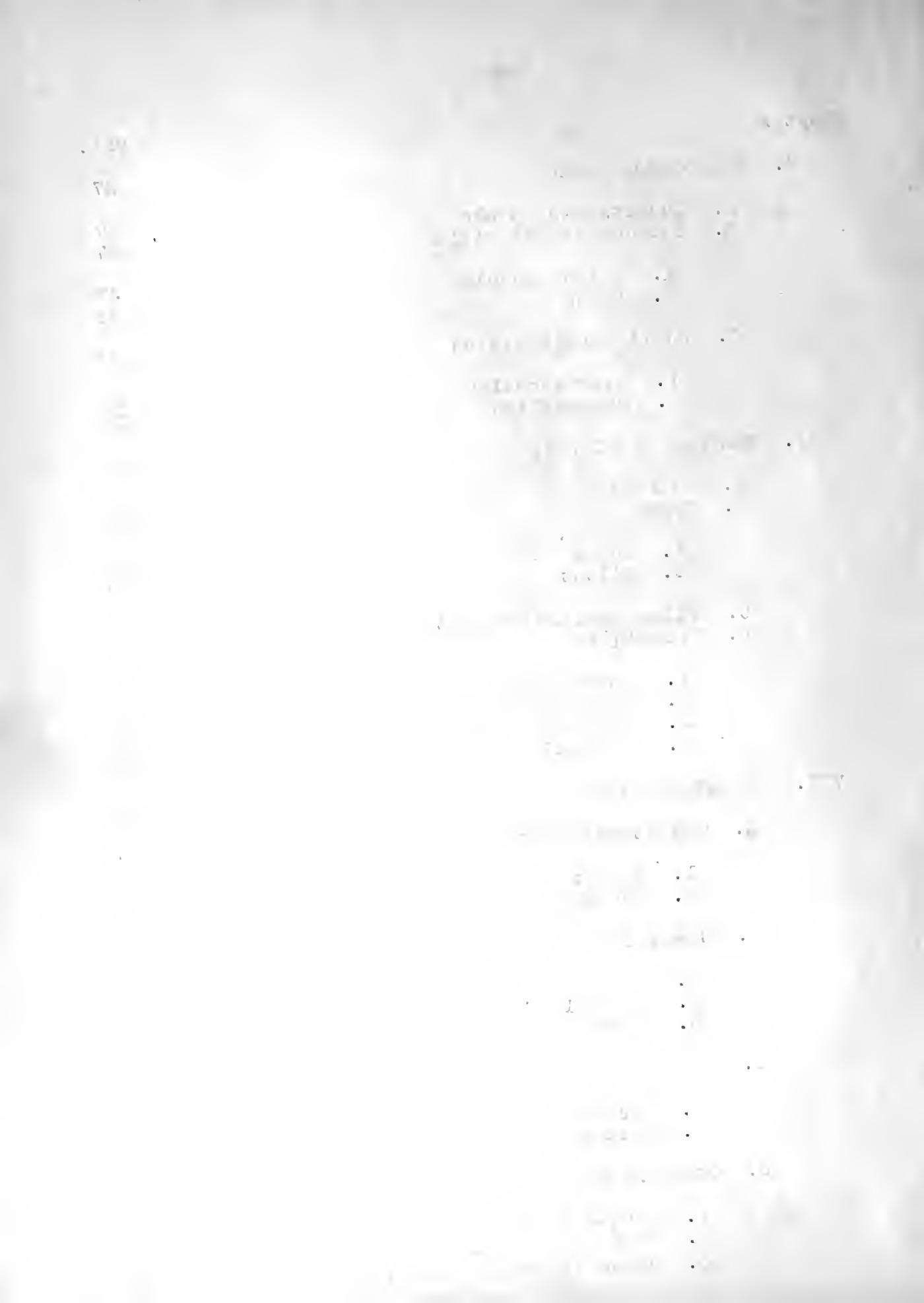
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CHAPTER I

INTRODUCTION

The study recorded in this report is based upon the work of fifth grade children in the Robert E. Lee School, Hillsborough County, Tampa, Florida.

The problem in this study is an experiment in the use of visual aids as an aid in the teaching of Social Studies in a fifth grade class of bilingual children.

It aims to prove the effectiveness of incidental instruction, with emphasis on the real things of life, with a study of the actual activities of men instead of the empty facts found in most texts.

As a teacher of a fifth grade class, largely made up of Latin children, having more or less limited English speaking vocabulary, the teaching of Social Studies had proved difficult and results were not satisfactory. The teacher decided that visual aids could be used as the best substitute available for actual experience used to build desirable concepts properly correlated to the field of Social Studies outlined in the course of study and the textbook. It was not intended to take the place of teaching; but as a supplement to that and the textbook.

The term "visual aids" includes several types of pictures, drawings, photographs, prints, stereographs, lantern slides,



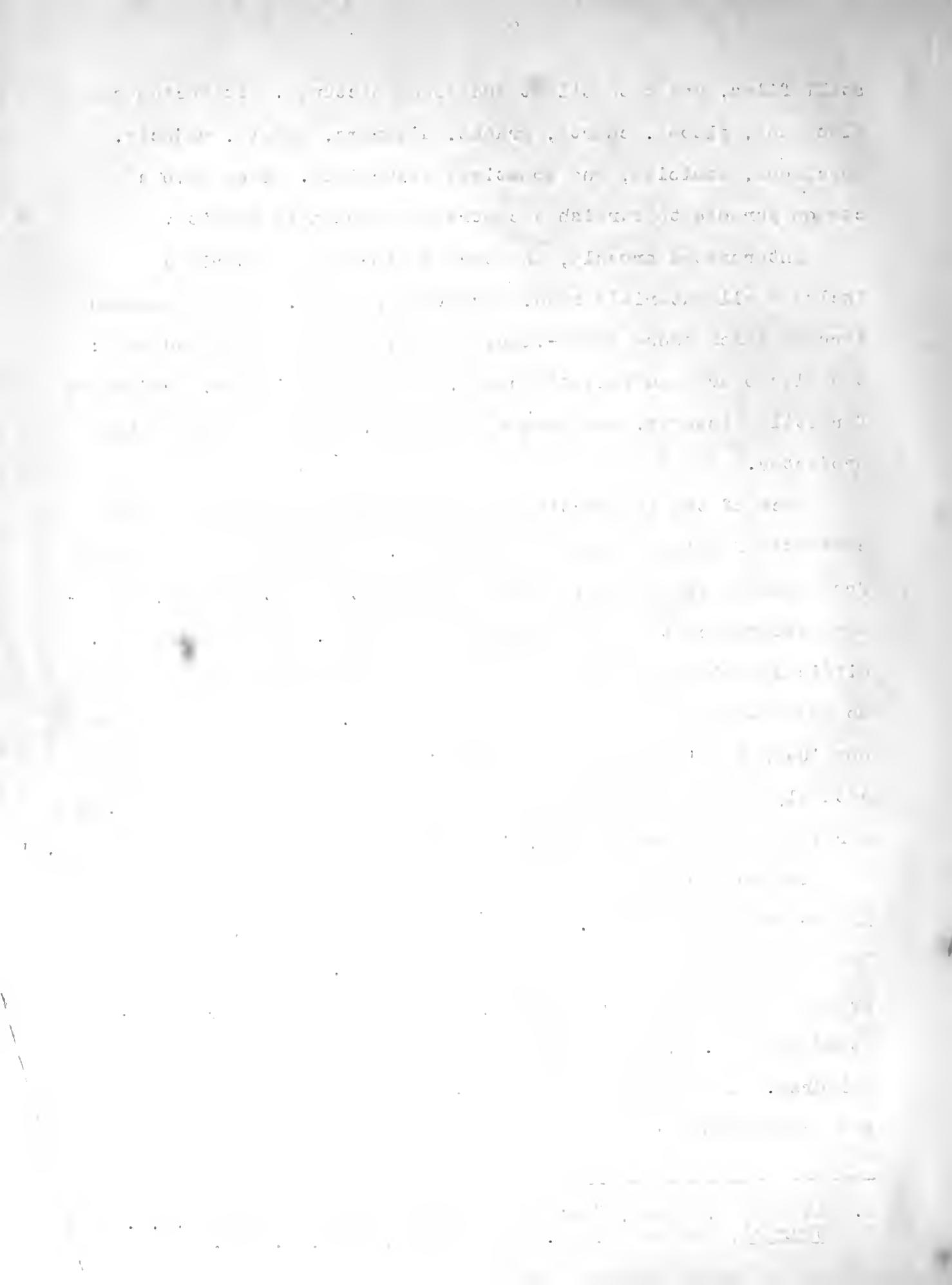
still films, and both silent and sound pictures. It includes also maps, globes, charts, graphs, diagrams, models, objects, specimens, exhibits, and sometimes excursions. They have a common purpose to furnish a concrete approach to reality.

Interpreted broadly, the term audio-visual materials includes all materials read, observed or heard. The implements through which these audio-visual materials were presented were: the blackboard and bulletin board, the motion picture, projectors for still pictures, the opaque projector, and the lantern slide projector.

Much of the instructional materials used by most teachers consists of printed books or pamphlets. Children can learn much from reading if they have had a sufficient amount of real, first-hand experience to make the words meaningful. "One of the most difficult things a teacher has to face is to know when her pupils do understand the words they read or speak. If these words are not 'backed up' by things and relations that the children have actually seen or heard or otherwise experienced at first-hand, the words are often meaningless, just black marks, on a piece of paper."¹

The writer found this to be the situation in this class of Latin-American children. The parents speak English, but usually Spanish is the language spoken in the homes. Many of the grandparents were born in Spain, and neither speak nor understand English. They display an interest in the education of their children. They attend the Parent-Teacher Association meetings and school programs in which their children have a part. Most

1. Stephen M. Coney, "Using Instructional Materials," N.E.A. Journal, Volume 37, No. 2, February, 1948, p. 100.



of the families are engaged in the cigar making industry.

The children are sensitive and very responsive to any attention shown them. These little people are often handicapped by social and economic conditions. The problem of placing them, while in school, in that environment which will induce them to develop better habits of living has been aided by a planned program of visual aids correlated with their Social Studies program in school.

A visual aid is any picture, model, object, or device which provides concrete visual experience to the learner. The various visual aids have been divided into the school journey, museum material, motion pictures, still pictures, and graphic materials. In this manner there is a progression from the most concrete to the least concrete in visual aids.

In many ways the school journey is the most valuable of the visual aids because it deals with real things in real situations. No expensive equipment is necessary, but it must be carefully planned and made to correlate with the curriculum.

Museum materials include all sorts of models, specimens, and objects. These are available from various sources. These models are removed from their natural setting but some aspects of reality, as length, breadth and thickness may be visualized: no costly equipment is necessary and they can be set up in the classroom by the pupils themselves.

Motion pictures add motion to the pictorial experience. This is a comparatively new field in education and there is much research yet to be done before teachers develop the best techniques for their use.

The less expensive visual aids have been adopted by some educators. In 1937 less than 10 percent of the schools of the nation used motion pictures as a definite part of instruction.

The most available of all visual aids are still pictures. The most realistic still pictorial material is the stereograph, as it supplies three dimensions. It was abandoned as something "old-fashioned", but recently came into popular use again. The photograph, the photographic print, and the illustration in the textbook are valuable if interpreted properly.

The film strip and the lantern slide are quite inexpensive and can be made by teachers and pupils. The opaque projector is valuable for large classes for enlarged projection of small-sized pictorial material.

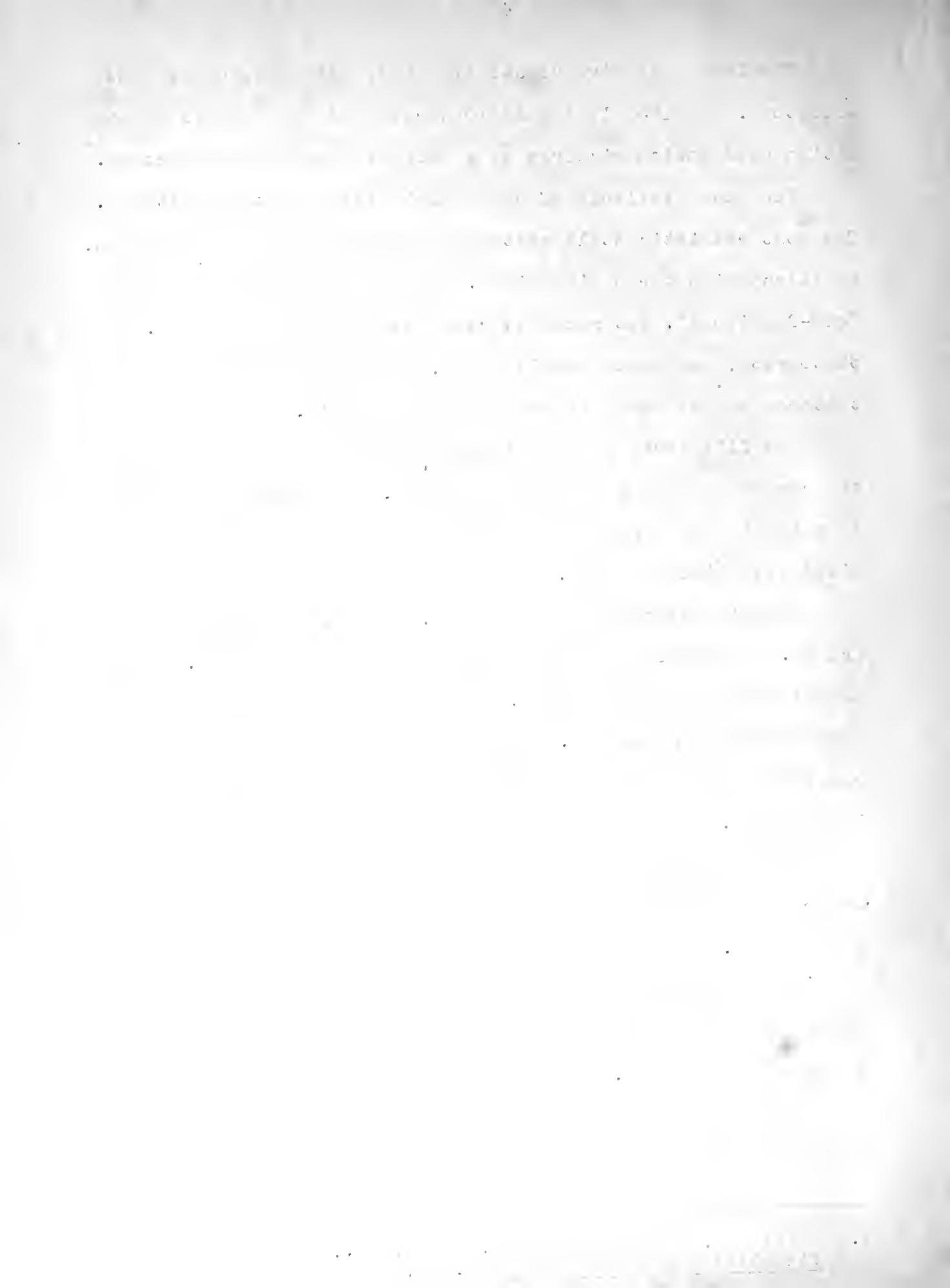
Graphic materials include maps, charts, cartoons, and graphs. They are the more abstract of the visual aids. They depend more upon experiences. Some pupils see relationships more quickly than others. These individual differences must be provided for by means of different materials and methods of instruction.

Some attempt has been made to measure the effectiveness of these visual aids in the field of Social Studies in this fifth grade class.

Visual education had a rather vague meaning for the writer until some of the following facts had been found out as outlined by other authorities.

The mechanics of the visual aid program consisted of a portable motion picture machine, an opaque projector, a film

1. Charles F. Hoban, Charles F. Hoban, Jr., Samuel B. Zisman, Visualizing the Curriculum, p. 13.

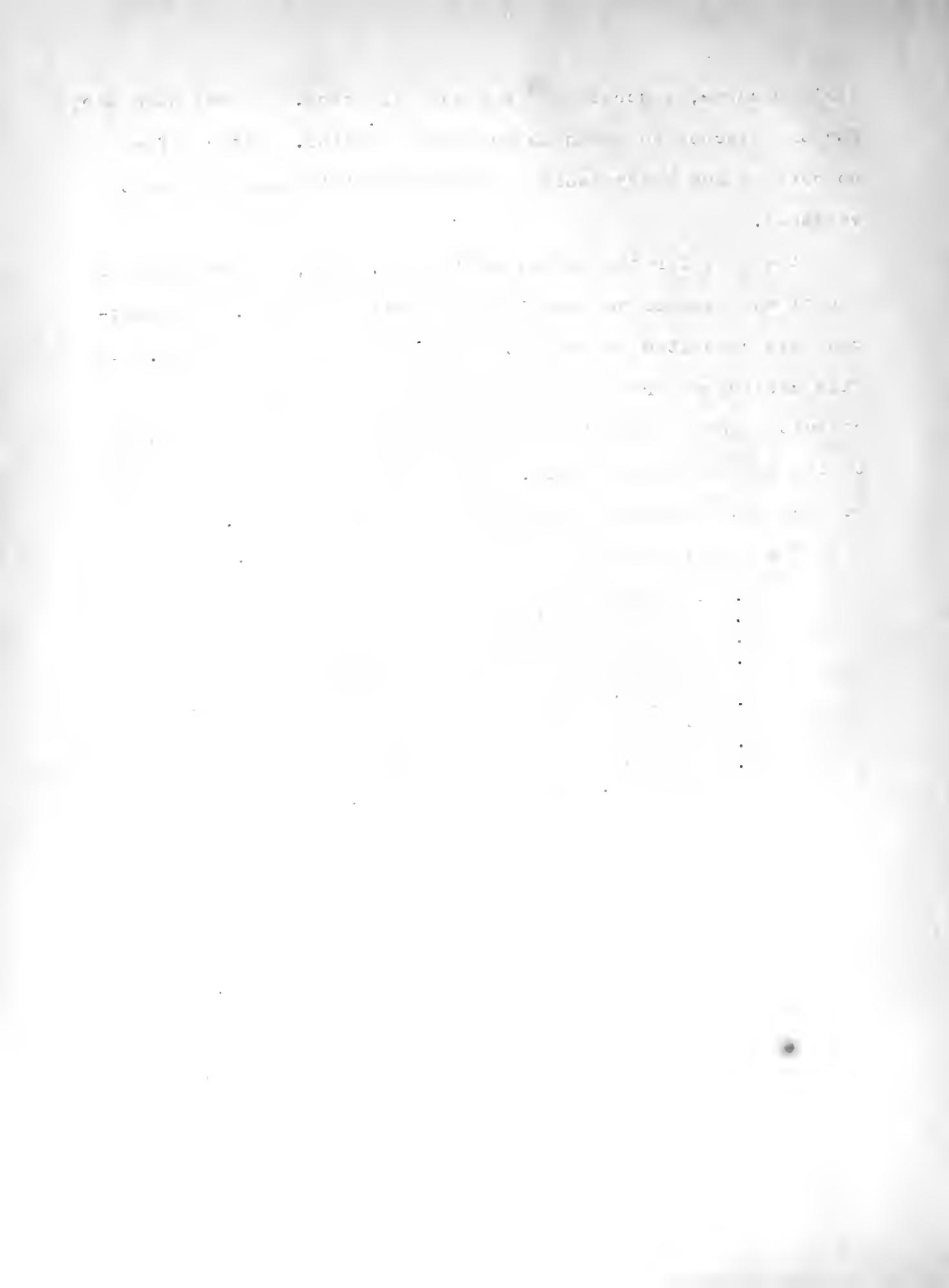


strip machine, a screen and a visual aid room. It was necessary for the teacher to learn to operate a machine. After a few operations the heavy feeling of responsibility and insecurity vanished.

The work for the months of January, 1948, to the close of school was planned and outlined in Social Subjects. The textbook was consulted and also the interests of the children. The film catalogues from the two best available sources were consulted and a selection of available films made, correlated to the topics to be studied. This advance order of films would be more apt to insure delivery at the required time.

The visual aids were used when needed most as:

1. To introduce a subject
2. To stimulate interest
3. To develop skill in reading and languages
4. To present information necessary to proper understanding of life
5. To provide reviews and tests on the understandings of concepts
6. To promote desirable attitudes
7. To provide opportunities for raising new problems, altering old ones, or the setting of new purposes



CHAPTER II

WHY VISUAL AIDS IN TEACHING

Teaching is the guidance of the natural activities of the learner and the stimulation of desired activities directing them through educational experiences to the acquisition of socially desirable controls of conduct.

Direct experiences should be supplemented by other experiences which should be as vivid as possible.¹ Visual aids are necessary to good instruction, and become powerful tools when used by an efficient instructor. Pictures succeed when words fail. Such aids should not displace good textbooks and teaching techniques. There is no substitute for personal instruction.

The use of the picture as an aid in education is not new. Picture language was the forerunner of our modern alphabet. A noted scientist predicted, nearly thirty years ago, that we should soon be able to throw away our texts, discharge most of the teachers, and teach the children in two or three hours each day with selected motion pictures.² If he had lived to see this change, he would have found the teacher and the text even more necessary than before.

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1. Burton, The Guidance of Learning Activities, Chapter 5.
 2. Ellsworth, C. Dent, "The Audio Visual Handbook", Society for Visual Education, 1946.

Visual Education is not a new toy. It has years of research back of it. The good teacher has been using visual materials as tools to learning for years. She herself is a human visual aid.

The first motion picture introduced into the classroom was probably treated as a novelty by the teacher, the students, and the school board. There is no doubt but what the students were very much entertained, the teacher saw educational possibilities, and the school board reckoned in dollars and cents. In order that the film might remain in the schoolroom, it was packed with facts. Educators shirked their responsibility for twenty years to say what they really wanted in educational motion pictures.

Twenty authors agreed on the following characteristics of
1
a good educational film:

Objectives of the Good Educational Film.

1. Its purposes are clear cut and obvious to the intended audience.
2. The objectives are closely associated with those of the curriculum.
3. The objectives are those which may be adequately exploited by the medium.
4. The objectives are sufficiently limited to assure adequate treatment.

Contents of the Film.

1. The content fits the curriculum.
2. The content is compatible with the interests of the intended audience.
3. Every effort is made to tell the truth.
4. The content is up to date.

Organization and Presentation of Contents.

1. The organization of the content is designed for maximum comprehension and assimilation; difficult concepts are sufficiently detailed in presentation.

2. The presentation is designed to arouse and sustain interest.
3. The presentation implies desirable relationships with associated fields of interest.
4. The summary is adequate and acts as a springboard to further learning activities.
5. All authors are agreed that the technical aspects of the Good Educational Film shall be of the best.

Of course, this code will change as our educational philosophies change. The responsibility of the teacher is to carry this charter into action.

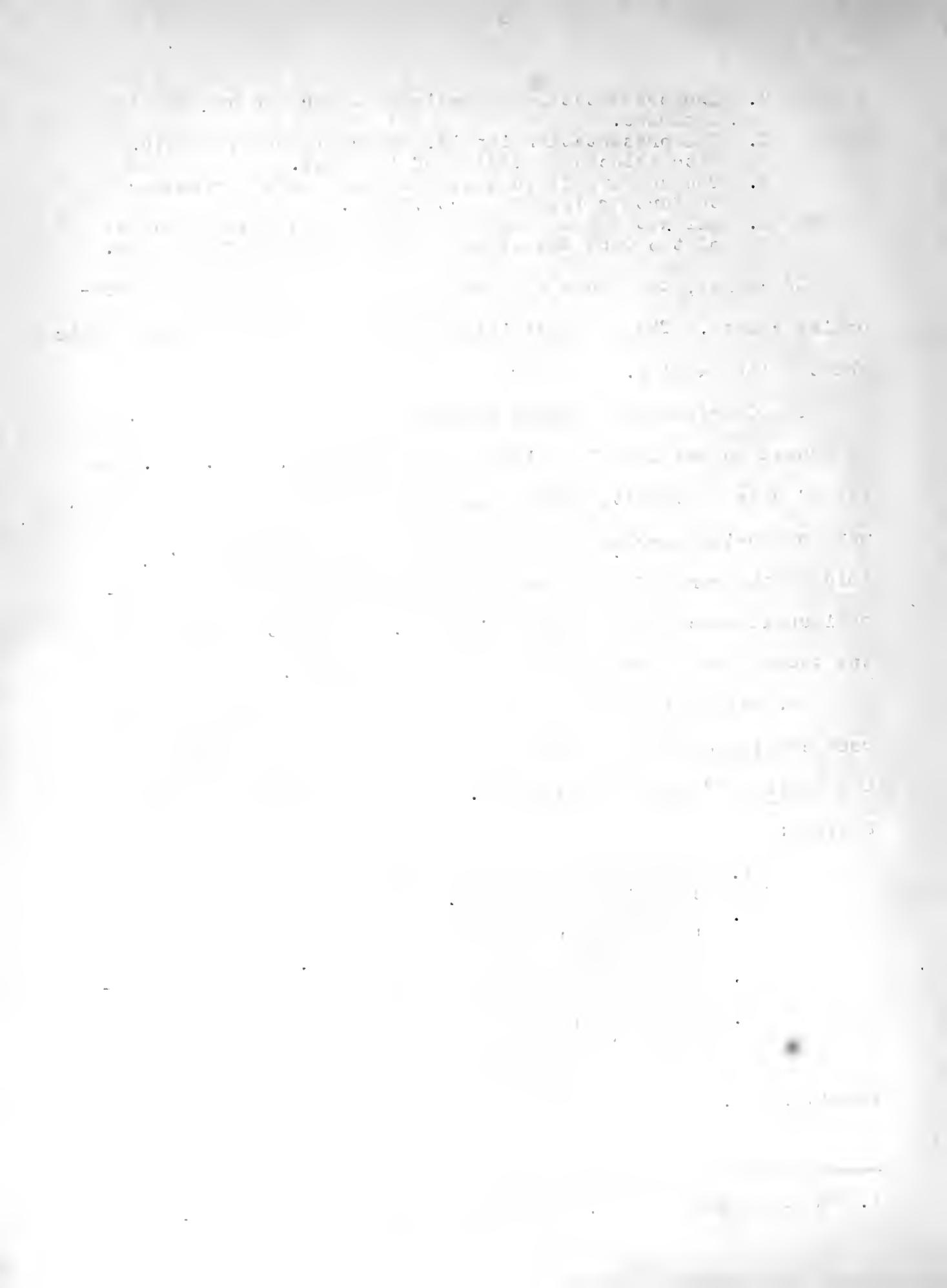
The Commission on Motion Pictures of the American Council on Education was held in Chicago on November 12, 1946. Dr. Mark May of Yale University gave an explanation of some of the research work now being carried on in the area of motion pictures. He told of the work of the committee in producing a series of experimental educational motion pictures. He dwelt particularly on the techniques of presentation of film material.

Dr. May used as an example the research work that had just been completed on four different versions of a film dealing with the topic of "Heart Circulation". The four versions were as follows:

1. Straight film presentation with introductory and concluding sequences.
2. Film presentation in which were contained some 'motivation' devices for purpose of obtaining and holding interest of students.
3. Film presentation with both motivation and participation devices included.
4. Version 1 (above) run as follows: one introduction; straight film content run twice, one conclusion sequence.

Results: Dr. May passed around a sample of the test used in the

1. "Educational Screen", Bulletin No. 10, December, 1946.



study and explained how it was constructed and why straight "factual" questions were used.

Given as a pre-test, students were shown to have been able to answer correctly 39% of the test (average); given as a post-test, students had an average of 47.2% answered correctly; gain (over the 39%) for the Version 1 students was 8.2%; for Version 2 it was 10.6%; for Version 3 it was 12.2%, and for Version 4 it was 14%.

The conclusion of Dr. May's study seemed to be that changes in film techniques would improve film efficiency. Very few visual-sensory aids are instructional in themselves. These materials properly used by trained teachers make it possible to teach the student more in a given time, and teach it more thoroughly, so that he will remember the information much longer.

The training program of the armed forces throughout World War II proved beyond doubt the effectiveness of all audio-visual training aids when properly applied.¹ It was necessary to train as quickly as possible many men and women in their various duties. Lecture methods were found to be inadequate. Educators were inducted into the military services and through training aids courses requiring ten weeks were shortened to six weeks or less.

Vision is important in forming lasting impressions. We are told that in Germany, before World War II, more than 40,000 motion picture projectors helped greatly in instilling Nazi ideologies among youth and adults.

1. Ellsworth C. Dent, "The Audio Visual Handbook", Society for Visual Education, 1946.

It was not possible for our men to spend years in preparations for war, as our enemies did. They had to learn quickly in order to preserve their lives. Those who were called to build equipment for war were placed in this training program also. This need caused the U. S. Office of Education to develop a large program for instructional units.

Over 4000 subjects produced in the armed forces training program taught our soldiers everything from military courtesy to ¹ the operation of a turret gun. Reports show that the learning time was shortened between 35% and 55%.

The sound motion picture had existed for about ten years before the war as a teaching device. When thousands of teachers returned to service, they brought with them an appreciation of the classroom film.

Visual education in the army is about eighteen years old. In 1937 the First Training Film Field Unit was established by the Training Film Field Unit but it is only recently that much emphasis has been placed upon motion pictures, filmstrips, and associated aids.

The War Department has given the following reasons why films and filmstrips are valuable as time savers and as aids ² in the quality of instruction.

- (1) They concentrate attention on essentials by showing only the essential action or subject.

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1. Bulletin by Encyclopedia Britannica - 1947.
 2. Note: Reprinted from No. 2, Vol. 4, 1942 "Business Screen".

- (2) They bring demonstrations of tactical exercises or equipment to the troops thus eliminating the time-consuming factor of moving troops to the demonstrating areas.
- (3) The same demonstration can be shown repeatedly without expending the time and labor to repeat such demonstrations in the field.
- (4) Films on the use and care of new equipment can be shown in advance of its arrival thus facilitating its immediate use.
- (5) Instruction for all troop units is standardized.
- (6) Mechanical functioning of weapons or motors can be clearly depicted by means of slow motion and animation.
- (7) All members of the class can see and hear all phases of an action which otherwise can be observed satisfactorily only by those close to the scene.
- (8) The services of the most highly trained troops and expert instructors are utilized in demonstrating the methods and techniques illustrated on the film. This insures that all troops, regardless of location, have constant visual access to the latest approved methods as a standard in attaining their training objectives.
Filmstrips and filmstrip projectors are especially useful for they are easily transported and can be utilized in day rooms, mess halls and similar locations without the need of complete darkness. Since any individual frame of a filmstrip can be held on the screen as long as desired, this permits the student to check his work with the correct procedure while the instructor can point out and discuss at length the vital points of the instruction.

Films will play an important part in any large post-war program for the teaching of international understanding. A World Conference of the Teaching Profession, held in Endicott, New York, had representatives of teachers' organizations from thirty nations.
² Some of their recommendations had a bearing on the use of films.

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- 1. "Educational Screen", Volume XXV, Bulletin No. 9, November 1946.
 - 2. The above is an official statement released by the War Department on behalf of the Signal Corps, U. S. Army.

Recommendation 12 dealt directly with the "Educational Uses of Modern Media of Mass Communication.

The press, the radio and the cinema are instruments not only of amusement and recreation but also of education. The influence of the press is limited only by the extent of literacy; the radio leaps across national boundaries to inform and inspire all who have ears to hear; the cinema teaches its lessons wholesome or detrimental with a power and persuasiveness beyond that of the most skilled teachers and the most highly organized educational systems. These, and other modern media of mass communication, have in the past and may in the future work either with teachers or against them in their efforts to develop international understanding. The Conference therefore, recommends:

- (a) That teachers and teachers' organizations endeavor to enlist the public press, the radio, and the instruments of visual education as potent allies for the attainment of their purposes.
- (b) That the press, radio, film, recording, and television be used within the school to dramatize and invigorate the processes of teaching and learning about the modern world and that schools be furnished with the equipment needed for this purpose.
- (c) That national and international radio and television broadcasts to schools be arranged and that such programs be used to celebrate events of international significance to render tributes to great men and women of all nations, and to create a sense of human brotherhood.
- (d) That films and recordings which are truly representative of the life and culture of the various nations be produced and that the films and recordings, with suitable adaptation in language or otherwise, be freely exchanged among schools of all nations.

A film to inform foreign audiences of American social, political and economic thought will be the first of a series sponsored by the U. S. State Department. It will show how views of the American people on national and international affairs find expression and influence industry and Government legislation and policies. The film will be produced by the United Productions of America.

The United States Education Mission to Germany has called for supplies of motion picture equipment. Dr. William Zoak, president of the American Council on Education, emphasized that films can play an important part in the re-education of the former Nazi nation.

Mr. Benait Levy, Director of the Film and Visual Information Division of the United Nations, Department of Information, stated that a temporary provisional Film and Visual Information Committee had been set up by the United Nations. International Labor Organization; United Nations Educational, Scientific and Cultural organization, and other Specialized Agencies to coordinate the film and visual media activities of their organizations. Their principal work will be studying the formation of a proposed United Nations Film Board and to draw up an agreement for that purpose.

An eight-point program for facilitating the use of educational motion pictures, radio, and other audio-visual materials is to be proposed to the new United Nations Educational, Scientific, and Cultural Organization. The recommendations were drawn up by representatives of the National Congress of Parents and Teachers and of twenty-eight other educational and civic organizations representing a total membership of more than ten million. These delegates met in June, 1946, for a conference sponsored by the American Council on Education and the Film Council of America.

The conference was also attended by film experts from six foreign countries, the United Nations, the Food and Agriculture Organization, and UNESCO's Preparatory Commission. Many state and city boards of education active in the use of audio-visual materials were likewise represented. These men and women heard addresses by various authorities in the areas of radio education, educational film production, and related audio-visual fields.

GEORGE F. ZOOK, president of the A.C.E., and C. R. Reagan, president of the Film Council, expressed jointly their satisfaction with the conference, stating that it had been 'most successful in representing the viewpoints of the many organizations and educational media. In the term audio-visual materials we have included motion picture films, radio broadcasting and sound recordings, the graphic arts, posters, charts, exhibits, and museum activities'.

The program proposed by this forward-looking group embodies the recommendations that UNESCO:

- (a) Organize and operate a comprehensive informational service on audio-visual materials.
- (b) Arrange for, facilitate, or produce audio-visual materials concerning its own activities, for use by member nations.
- (c) Develop internationally accepted standards for the evaluation of audio-visual materials.
- (d) Speed the free flow of audio-visual materials among nations.
- (e) Facilitate distribution of audio-visual materials through established channels -- governmental, educational and commercial.
- (f) Assist in an increased and more effective use of audio-visual materials.
- (g) Develop research and encourage research projects by member nations in the fields of educational radio, motion pictures, and other audio-visual media.
- (h) Facilitate the training and exchange of personnel engaged in fields related to the production, distribution, and use of audio-visual materials.

Members of the conference also passed a resolution recommending the establishment of a nongovernmental national coordinating group to be cooperative with the National Commission to be appointed by the U. S. as its advisory body for UNESCO. The A.C.E. and the Film Council of America were requested to proceed toward the formation of such a national audio-visual group.¹

There are many problems in international affairs facing nations of the world today. But the chief problem, and the one

1. Ruth B. Hedges, National Parent-Teacher, September, 1946.

that will solve all other difficulties, is that of bringing the people of all countries into a knowledge of one another, and that will end their fears and misunderstandings. They need to know the life, customs, and religions of one another. This understanding will bring tolerance for all the other fellow has and all that he believes in. It is the task of education to bring about this result, through an educational program for all the peoples of the world. This medium might be a planned educational program of motion pictures to teach the truth about all peoples and countries.

A program of visual education has been worked out for post-war China to tell the four hundred and fifty million Chinese about the rest of the world and to train thousands for reconstruction work. Such programs are being worked out in other countries. The Soviet Union has realized for years the educational power of the motion picture. England has recognized the film as a powerful medium of education. Hitler demonstrated clearly what could be done in educating the masses. This can
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done in any country either for good or for evil.

Experimental evidence from among film research shows that the amount learned from the films varies with the educational background and intellectual ability of the learner -- but in all
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cases some learning results from film showing.

Two matched educational groups were selected. One was shown an adult film Prelude to War, and the other group, named

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1. "Educational Screen", No. 8, October, 1946.
 2. Charles F. Hoban, Jr., "Movies that Teach".

the control group, did not see the film. The same test was given to both groups, so that the amount of learning could be determined by comparing the test scores of the two groups. The results are shown in percentage of test questions correctly answered.

<u>Informational Educational Level</u>	<u>Effect of Film Showing Groups Measured</u>	<u>Percentage Correct Answers</u>
Grade	Control Group	30%
School	Film Group	41%
High School	Control Group	44%
	Film Group	61%

It may be noted that those whose educational background included high school or college experience learned more than those whose educational background was limited to grade school.

It might be interesting to wonder what the effect of films in school might have had on this latter group while in school. Boys and girls drop out before reaching or finishing high school as school fails to satisfy their need for success, for security, or for enriched experience in the things that are important to boys and girls. Grade school is often dulled by "book learning". Films can help to change this and make education much more interesting.

Films have been used by schools and colleges largely for academic instruction and not for the broader purposes for which motion pictures were used in the army, namely -- general information, habit formation in good conduct, or general moral and social orientation. This limited use of films in education perhaps has been responsible for its very slow development in

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the schools and colleges.

Films that teach basic truths build values and the self-control and strong character necessary to live by these values. Lessons in good living need to be taught in films made for post-war education.

During the period from July 1, 1943, to June 30, 1945,¹ there was a grand total of 4,217,246 films shown in the army. Three out of every four films shown were training films. Orientation and information films made up the remaining fourth. During the last year of the war there was an increase in this latter type of film. This should be significant to all educational groups. Much of the tension existing in our country and other countries of the world could be lessened through the use of motion pictures which gave an accurate picture of the objectives and aims of each country.

Some silent films made twenty years ago are still used in American schools. Unless the material shown in these films is wrong, or the styles are entirely out of date, their withdrawal is not justified. Some silent films should be produced for the younger child. This style is better suited sometimes than the sound films made especially for them. The silent film has the effect of telling the story with the camera.

The problem of the sponsored film has been of concern to educators. This was discussed by a group of educators in Detroit,² April 4-6, 1946. They decided that these materials should be free of the influence of special interests and that schools could

1. Ibid., p. 44

2. Ibid., p. 67

not develop a good audio-visual program based solely on sponsored material. Its use can be justified only in that the learner will have a valuable experience he would not otherwise have.

One educator states our educational programs are never built for time but for eternity.¹ He suggests that American Colleges ought to consider such a program as this:

1. Professional or vocational training for all.
2. The study of the theory of science and of the application of scientific discoveries to our technology.
3. The assumptions and workings of representative government, particularly in the United States and in the British Commonwealth of nations.
4. The study of Russia.
5. The study of the Orient.
6. The study of personal relationships in modern society.

Perhaps the pedagogical problem alone could be best solved through the help of visual education. The teaching of international understanding should be coordinated with all levels and phases of the school curriculum. It is not something to be carried on in isolation. The development of an attitude of international understanding in youth today rests with the teacher. Coordinated films can be of great value not only in education but also to the destiny of the world.

Effective use of films in education begins with the film producer, not with the teacher. If the films are to teach, they must stimulate and influence the student audience in the proper way. Since learning is multiple -- the children don't learn just one thing at a time, but several things -- they may be learning

1. Howard Mumford Jones, "Education and World Tragedy"

to be dependent or cynical, while the teacher's aims are loftier. There is more need for research to determine the general values of films in education. Both the schools and the army and navy have much in common, and some of the research in the teaching techniques for the war training program can be used in civilian education.

If scenes are to be remembered by the audience they must be presented with force and vividness. Sometimes the commentary in an educational film is too hurried or too technical.

Slow motion or fast motion photography requires a careful explanation with the younger audiences. Most adult audiences resent propaganda.

Cartoons appeal to children and have the value of emotional experience but may not be related to the objectives of education. Humorous films may be remembered but if a balance is not kept the lesson is forgotten that was intended. There is temptation to make educational films amusing also as a reaction away from the film of the past. Good teaching would suffer a loss from over-use of theatrical techniques.

Learning is a slow process, if too much is shown too quickly it cannot be absorbed. Films formerly were made to suit the professors not the students. For this reason most elementary films are of short duration now.

Not simple repetition, but repetition in variety is the "law of learning". Films should have a greater variety of scenes and situations relating the major understandings the films are to develop.

Teaching films usually follow a certain basic structure.

1. A relationship is established with the learner, so that the audience can identify itself with the characters of the film.
2. The information, on the lesson to be taught should follow suited to the background of the audience.
3. Then the main points, or situations are reviewed and summarized.
4. The audience should not have a sense of finality at the end as if the problem ~~had~~ entirely been solved. These should be a challenge for continued learning in the direction of the film lesson.

Educators and advertisers both aim to influence and change human behavior. In entertainment, the audience demands action from films, but in education, the film demands action from the audience.

The use of the teacher as a main character and the classroom as a setting can be used in teaching arithmetic, art, handwriting, spelling, and some concepts of geography with good effect.

The effective use of educational films depends upon the professional competence of both the producer, and the classroom teacher.

The following are only a few of the areas of subject matter covered in film catalogues.²

Agriculture	Journalism
Art	Languages
Astronomy	Literature
Botany	Manufacturing
Business	Marketing
Chemistry	Mathematics
Communications	Medicine
Dairy	Military Training

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1. Ibid., p. 97
 2. Kenneth B. Haas & Harvey I. Pacher, The Preparation and Use OF Visual Aids, p. 3.

Engineering	Mining
Executive Training	Personnel
Farm Economics	Development
Fine Arts	Philosophy
Fisheries	Physics
Foreman Training	Religion
Geography	Retailing
Geology	Salesmanship
Guidance	Science
Health	Secretarial Work
History	Shorthand
Home Economics	Sociology
Hotels	Supervision
Industrial Management	Teacher-Training
Textiles	Vocational Training
Transportation	Zoology
Typewriting	

The majority of the more common visual training aids now in use among schools were first applied to the training problems of industry. Industrial groups of American and foreign-born workers could both understand the international languages of pictures. Through them lessons in safety, cleanliness, cooperation, and individual duties could be taught.

Industries use motion pictures, slides, film strips, charts and exhibits for advertising purposes. Motion pictures cover many phases of the leading industries of the United States. For example, the Bureau of Mines, U. S. Department of the Interior, has for distribution more than a hundred motion pictures available for use anywhere in the United States at no cost except for transportation.

The United Air Lines have available for the use of schools numerous film strips, motion pictures and illustrated booklets which tell the story of aviation. Pan-American World Airways has developed a teaching kit on South America which includes maps, charts, posters, film strips, motion pictures and teachers'

manuals for use in classrooms.

Publishers of textbooks and periodicals have visual training materials which correlate with their publications. The picture stories which appear in each issue of the Coronet during the school year are also available on film strips at low cost. Coronet Instructional Films now have available more than sixty¹ teaching films designed for classroom use.

A general survey of all schools and colleges by the U. S. Office of Education and the American Council on Education in 1936 -- of 8806 schools reporting, 7671 owned picture projectors. Of these schools 11,501 had radios, 1000 had centralized sound systems -- three quarters of a million had phonograph records and more than three million slides.

Since this survey ten years ago, many more schools have begun the systematic use of audio-visual aids. Also, during World War II, it was not possible to supply more than a small portion of the projection equipment schools really wanted.

In tracing the introduction of various types of audio-visual education by 1890, the school journey, plays and pageants, objects and models, maps and globes, photos and prints and $3\frac{1}{2} \times 4"$ slides had made their appearance. By 1900, stereographs were used, followed by phonograph records in 1910. Some 35mm silent films were used by 1915 but few. Film strips became more general by 1920, with the addition of radio programs by 1925, as well as 16mm silent films. Between 1925 and 1930 sound films made their appearance as well as sound systems. Since 1940 radio recordings, 2" x 2" slides, stereo slides and facsimile

1. Ellsworth C. Dent, "The Audio-Visual Handbook".

2. Ibid.

are used. Tape and wire recorders and rectograph slides are beginning to be used in some classrooms.

The extent to which all these valuable training aids are used, and their effectiveness depends almost entirely upon the amount and quality of training the teacher has received. The inadequate training of teachers is the greatest retarding factor.

CHAPTER III

BILINGUALISM AND CURRENT PRACTICES ELSEWHERE

Bilingualism is generally recognized as offering serious instructional difficulties among minority groups. The adaptation of the curriculum to the ability needs and experiences of children from foreign-speaking homes offers a succession of teaching problems. Research and experimentation concerned with the variety of problems involved in the education of bilingual children is as yet inadequate to the needs.

In recent years the so-called "Social Studies" program appears to make more positive contributions to the development of citizenship. It is a large problem for our schools to prepare regular American children for good citizenship. It is a much larger problem to do the same with children handicapped by being unfamiliar with the language in use.

The word "bilingual" has been defined as "speaking two different languages". In American schools, bilingualism is generally accepted as a handicap. Bilingual children, in this study, are those children who speak Spanish at home and off the school grounds, but who in school must use English.

Some current practices in public schools in which bilingual children are enrolled are interesting. San Antonio has long held first place in the education of Mexican children. The

State of Texas approves these techniques:

"Foreign speaking children learning English, should be looked upon by teachers as being in the same position as American children who are learning French or German, and words taught should be of ultimate value to the child, and their presentation should be accompanied by an interesting experience."

The State of California emphasizes the fact that although the aims of education are practically the same for all children, foreign or non-English speaking children need special techniques.

With the Latin American, kindness, consideration for the other person is a most important quality. Brusqueness is to be avoided at all costs. The Latin American always has time for friends. They are the most important element in his life. He is never too busy to attend them. The business man is interested in cultural affairs, and likes to talk about literature, art and world politics. It is easy to understand, then, that the Latin American engaged in commercial life, on retiring from business, is not confronted with the difficulty of not knowing what to do with himself when he no longer goes to the office.

"The Anglo-Saxon's ideals revolve around morality and success; those of the Latin American revolve around beauty and intellectual brilliance."²

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1. Project in Research in Universities, Learning English Incidentally, "A Study of Bilingual Children", Washington, D. C.: Government Printing Office, United States Office of Education, Bulletin No. 15, p. 6.
 2. Samuel Guy Inman, Latin America, p. 35

the following day he had

The fact that Latin Americans happen to emphasize these things in their own lives is due largely to their racial inheritances. The Latin American is made up of three original stocks - the Indian, the Iberian and the Negro. The chief intellectual influences are due to the Iberian people, the Spanish and the Portuguese, who introduced their culture here.

The world has been made small by the airplane and radio and our Latin American neighbors are drawn nearer to us. If we are to be friends as well as neighbors, we must become better acquainted with the people, learn more about their home life and the character of the community in which they live. But the children of the United States do not have to wait until they grow up to contribute toward inter-American friendship, for in many areas of the United States people are living who were born in countries to the south.¹ In many industrial centers of this country where there are numbers of Latin Americans, certain traditions have been carefully preserved and children may see at first hand some of the customs dear to the children of Latin America.

This is particularly true in the schools of Tampa, where the Anglo-Saxon children mingle with the Latin American children. The American Council on Education has long been concerned with tasks concerning the study of teaching materials on inter-American relations in our school materials. The Committee is interested in inserting in our teaching materials accurate data

1. M. Elizabeth Barry and Delia Goetz, Children of the Other Americas, p. 103

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about Latin American peoples, cultures, nations and relations.

The study deals with varied types of teaching materials - textbooks, motion pictures, still pictures, charts, diagrams, current events magazines, newspapers and art objects, available for school use. But the teaching aids surveyed in this study do not contain all that is taught to young citizens of the United States about Latin America. A great amount of instruction at all school levels is direct and oral. Direct participation in a Latin American Fiesta would be the best type of audio-visual aid to learn more about Latin American customs. In sharing the songs, dances, costumes and stories, the school room may serve as a laboratory for children of different nationalities.

The writer began the work in Social Studies at the opening of school with a study of early Spanish explorers, and the neighboring countries of Mexico, Central America, and the West Indies. The similarity in names, customs, language, music and art established a bond of interest with the children.

In the spring of 1922, the Atlanta Board of Education, following the recommendation of Superintendent Willas A. Sutton, directed him to begin a city-wide visual instruction program. The program was under the direction of Mr. Joe Coffman, who came to Atlanta from the Birmingham, Alabama, Public Schools.² At the close of World War I, Dr. Sutton, while still principal

1. Committee on the Study of Teaching Materials on Inter-American Subjects, Latin America in School and College Teaching Materials, Washington, D. C. Government Printing Office, 1944 - p. 13
2. Walter S. Bell, "Atlanta Audio-Visual Anniversary", Educational Screen, (November, 1947), p. 494.

of the Atlanta Technological High School, purchased a surplus war projector and other types of visual education equipment to begin a program of visual instruction in his school. Many other schools acquired lantern-slide projectors and sets of both slides and stereographs. Thus, by the time Dr. Sutton became Superintendent of Schools in 1921, the Atlanta Schools were ready for a city-wide visual instruction program. Very few films suitable for educational use were available, so the main function was to produce visual aids.

Another problem was the danger of fire. All the films were 35mm. and many of the subjects were available only on nitrate stock. Fortunately no fires occurred.

In 1924, Dr. E. R. Enlow was appointed director and he shifted the emphasis to the distribution and utilization of such materials. In 1926, a \$26,000.00 appropriation was granted in addition to regular funds. Most of this money was used to provide sets of lantern slides and stereographs for schools.

Dr. Sutton inaugurated one of the first schools of the air in cooperation with radio station W.S.B. Thus the Atlanta Schools became active in both audio and visual education. In 1926-27 a period of depression came in which a program of economy reduced the staff. By using student help, activities were continued. The cry to do away with "fills" continued, but was combatted with the weapon of service to all civic groups. A.W.P.A. visual education project assisted in the production program. The library of materials was increased from year to

year, and a daily service to teachers rendered. A radio teacher was assigned to coordinate school programs with the various radio stations in Atlanta.

During the years since the close of the war, the staff has been busy trying to overcome some of the shortages of materials and equipment that developed during the war. The war had given a new impetus to audio-visual education. There were about 17,500 items sent out during the school year of 1946-47. The future of audio-visual education in Atlanta is very promising.

Dr. Arthur Stenius, as coordinator of visual, radio and safety education, of the Detroit Public Schools, has a five-year program of planning.¹ He takes into account budget, mechanical distribution, supervision and in-service training. The plans outlined are concerned with projected visuals only. It is based primarily on the 16mm. motion picture, the slidefilm and the 2"x 2" slide. Only two different types of projectors will be needed. Sound motion pictures are to be furnished on a basis of one for each 500 pupils; slidefilm projectors on the basis of one for each 300 students. All schools are to have at least one projector before any school receives a second one. There is to be a continuation of a centralized library of motion picture films, but basic libraries of slidefilms and 2" x 2" slides will be established in individual schools. The film library is planned on the assumption that a teacher should be able to get a film within the period of time given over to the unit of work to which the picture applies. The Board of Education

1. Arthur Stenius, "Where Do We Go From Here", See and Hear, (November, 1945) pp. 77-87.

plans to own 3700 sound films by 1950. Increased personnel is not planned until the third year. It is thought the five-year program will cost about \$250,000 for equipment and materials.

In 1939 Dr. Stenius spent nine months abroad studying audio-visual programs in ten European countries. Detroit's future visual program seems to be a planned and definite one.

A year ago the growing importance of visual education in Canada was recognized by the establishment of a provincial department of audio-visual media in the few remaining provinces which had not already done so.¹ In Canada education is a provincial and not a federal concern. Local school boards, too, have a great deal of authority. Every province now has its own visual education system, headed by a supervisor. Several cities have long maintained their own visual education departments. Some school boards have projectors which travel from school to school on a regular schedule. A string of film libraries stretch across Canada from Nova Scotia to Vancouver Island - often housed in the local public library.

The rural circuits are operated by the National Film Board for the benefit of small schools in remote districts. This portable equipment has a regular route to cover every month, except July and August. In this way real visual education is brought within the reach even of those schools which have no projectors of their own.

The National Film Board has also aided education by the production of films and film strips. Since the end of the war, the Board has begun upon an experiment in visual units: film,

1. "News and Notes", Educational Screen, (September, 1947), Vol. XXVI, p. 398.

filmstrip and wall-sheets dealing with the same topic and designed for related use in the classroom. Recent productions include a number of very useful filmstrips for schools, such as the Canadian Journey, a series of colored drawings and maps showing the geography and chief resources of each of the provinces.

The Film Festival at Cannes, France, took place in a special theater - the "Palais des Festivals", which included an ¹ auditorium for 1800 spectators. This event took place September 12 to 25, 1947. Six international conventions met at Cannes during the course of the Festival. An exhibit of "Fifty Years of the French Cinema" was held. An International Day of Films for Youth was held. It is hoped that an International Committee on the Cinema for the Youth may be organized.

The Chicago Film Council held a "Films of the World Festival" for seven consecutive Saturday afternoons at the Surf Theater, beginning October 11 and continuing through November 22. It was a civic enterprise supported by many of the leading civic and educational organizations of Chicago and of the nation. Outstanding short documentary and informational films were selected by a panel of judges from the films submitted to the contest committee. These select films were screened for the benefit of the public, including especially teachers, church people, and leaders of community and adult groups. It seemed there was a true demand for a festival patterned after those held in many countries in Europe.

1. Ibid., p. 398

CHAPTER IV

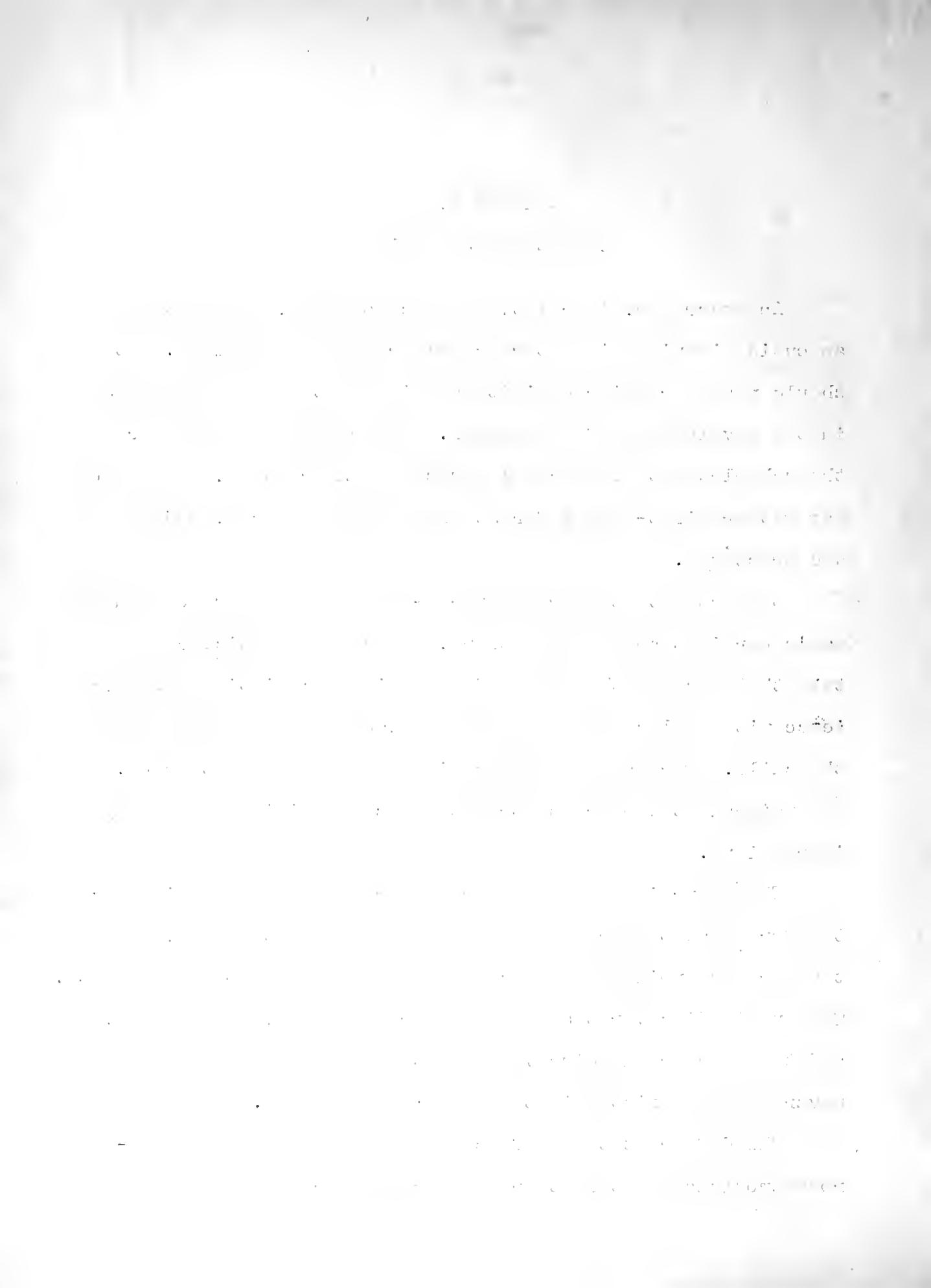
THE SCHOOL JOURNEY

An excursion, in relation to school life, does not mean an outing indulged in after school or during a weekend. It should mean a regular definite aid in the teaching procedure in the development of the lesson. The pupils are taken from the schoolroom to the actual source of information, where they may gather first-hand information regarding places, objects and processes.

Contact with the great out-of-doors has always been one of man's earliest and best teachers. No symbol or picture can take the place of the school journey in which intimate experience with a place or thing becomes the actual experience of the child. Personal experience is always the best teacher. The natural atmosphere contributes much to vivid and lasting impressions.

The excursion lesson offers the rare opportunity in which the formal atmosphere of the schoolroom is left behind, and teacher and pupils meet on common ground with a common interest. The pupils discover that the teacher is a real, human being, and the teacher may discover latent abilities and interests she never dreamed existed in the most backward boys.

The different types of school journeys vitalize classroom problems and tend to relate school work to life out of

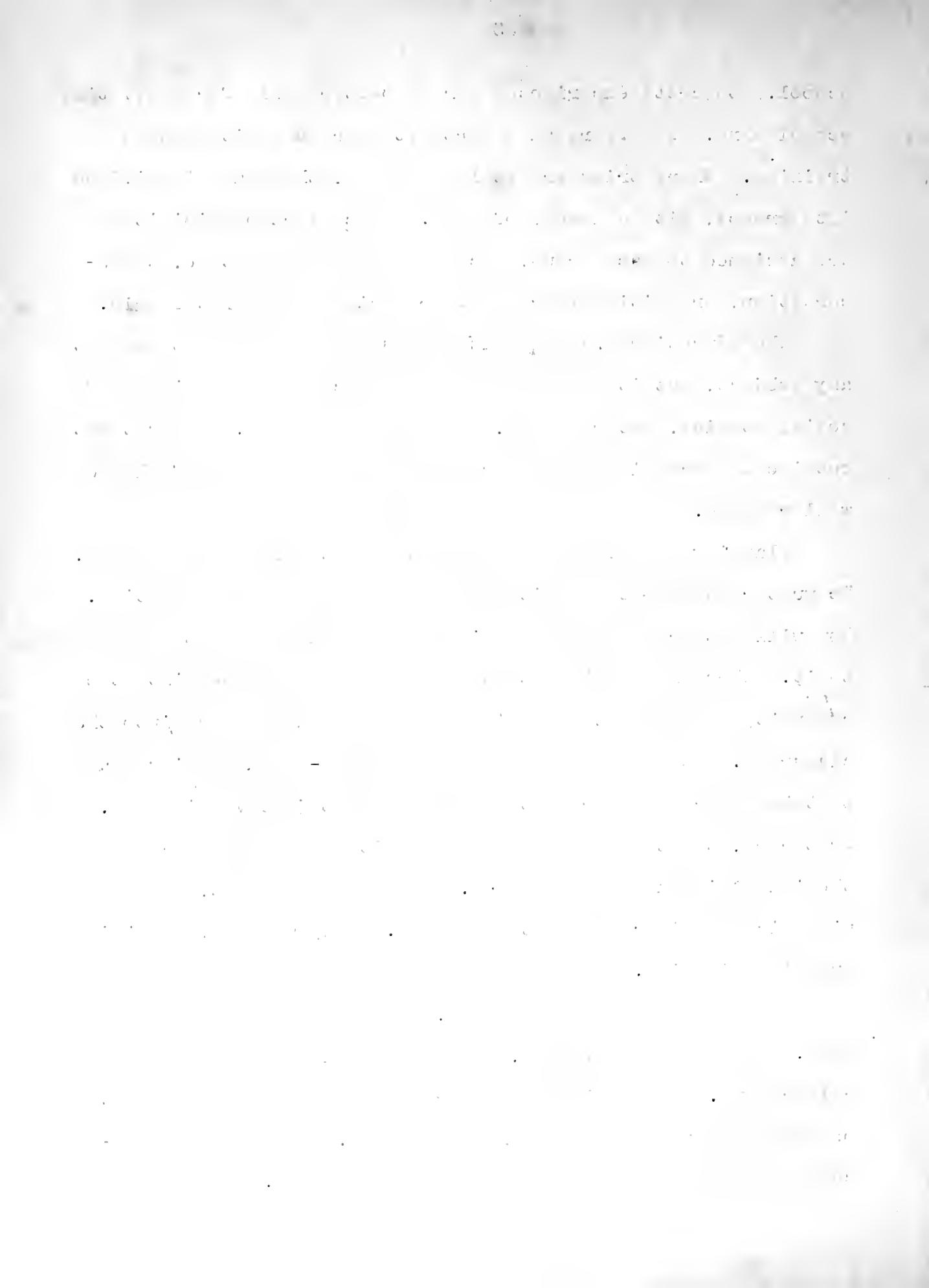


school. Concrete experiences form a better basis for motivating school work. It offers an opportunity for good citizenship training. Where trips are well organized, the class is divided into groups, with a leader of each. Special responsibilities are assigned to each group, such as arranging the time, transportation, or writing letters of appreciation after the trip.

The education excursion is a valuable supplement to almost any subject, but it is probably most effective in the fields of social studies, nature study, and allied subjects. We must get outside the school walls if our learning is to become full and well rounded.

Planning in advance is of great importance in field trips. We must respond both physically and mentally to the situation. You will get from the field trip in proportion to what you bring to it. Through the field trip we bring the classroom into the community and bring the problems of the community back into the classroom. It is better to have a few well-planned trips than to take a large number of trips with hazy objectives in mind. In theory, the teacher should have visited the place for which the field trip has been arranged. Before setting out, the class will pick specific things to look for. They will have definite questions in mind.

If school buses are not used, arrangements must be carefully made. If money is involved, the teacher must make individual collections. Some children who are unable to pay will have to be provided for without embarrassing them. Some routine procedure for parental permission may be necessary.



The safety problem in conducting a field trip is a big one. The group must be checked frequently to make sure no child is lost.

One of the mistakes that has been made with field trips is that nothing is done with what has been learned on the trip. You ought to check to see whether your purposes have been achieved. This follow-through might be a group discussion in the classroom, creative work based on the trip, tests to determine information acquired or special reports from the pupils.

As a concrete example of the handling of an excursion, the writer mentions the trip on "The Silver Meteor". This fifth grade class became very much interested in the subject of transportation, particularly trains, quite early in the beginning of the school year. In order to get this information at first hand, they decided to take a trip upon a train. A great many of the children had never had this experience. First, much research was carried on by individual students to find out all the information possible about trains. The earliest models down to the most recent were discussed. Exhibits and stereographs were freely used. Different words related to trains were introduced. The reading textbook "Engine Whistles" and companion workbook named the various parts of a train. Several films about transportation were shown. Many pictures of trains were brought by the pupils and exhibited on the bulletin board. Posters were drawn to show this acquired knowledge of trains.

A discussion of the problems not clearly understood was made. Some of these were written out, which the class hoped to solve through the means of a trip.

and the infection. It is a process of self-reinforcement, often
reinforced by some form of physical or mental feedback so that each small
bit of progress in the process reinforces the next bit.

The process of self-reinforcement can be used to increase
the probability of a particular outcome. For example, if you want to
increase your chances of getting a job, you might start by applying for
a few jobs, even though you don't have all the qualifications required.
This will give you some experience and help you identify what you need to
improve. You can then use this experience to refine your application
process, such as by tailoring your resume to the specific requirements
of the job. This will increase your chances of getting a job, which
will then reinforce your self-confidence and motivation, leading
to further success. This is a classic example of self-reinforcement
in action. It's a powerful tool for achieving your goals, but it's important
to remember that it's just one part of the equation. You also need to
have a clear goal, a plan, and the right resources to make it work.
So, if you're looking to achieve something, start by taking small steps
and reinforcing them along the way. You'll be surprised at how far
you can go with the right attitude and persistence.

Permission blanks were sent home to the parents, telling details of the trip, which were to be returned signed if the pupil was to be included in the group. The room mother was invited to accompany the group. Two other mothers wished to go also. Each child had a special partner for the trip and carried his lunch. Arrangements were made with the local passenger agent for the day a coach was to be reserved on the "Silver Meteor" that left daily near noon from Tampa to Lakeland, Florida, and points north.

Standards of safety and behavior on the trip were set up with the pupils. On the trip to the station, and at other stops, the class fell into prearranged groups. Patrols led and came at the rear. The entire train was visited and explained by the passenger agent, who accompanied us on the trip. Each of the mothers, and the teacher, was responsible for a small group.

At the end of a short but enjoyable ride of some thirty miles, a short walk ended in a city park where lunch was enjoyed. Provision for milk had previously been made. Games followed and soon the return journey was made back to Tampa. The room was a mixed group in that the pupils were enrolled from many different schools. In addition to information gained, the trip helped to create a better feeling of cooperation, and more friendly attitude within the group.

Next day, in open discussion, pupils and teacher pooled their findings, talked over their experiences and checked up on the solution of the problems. It served as an inspiration for other classroom activities in language, spelling and music, as

well as in the fields of social studies and reading. An attractive booklet on "Trains" contained concrete evidence of many skills gained as a result of this school journey.

whose first condition for balance factor to exist is the following:
that among the entries contained "third" no sufficient evidence
of causal factors that can eliminate the factor effect

CHAPTER V

THE SCHOOL MUSEUM

Teachers know that pupils are more interested in the realistic and concrete than in the abstract and symbolic. It is not enough to display objects that are exciting or wonderful. There must be a follow-through.

The school museum should be kept alive by rearranging. Too many items are confusing. The individual collection provides an outlet for the hoarding instincts of children. Any school can establish a school museum. A good way is to ask the pupils to bring materials from home bearing on the lesson. The surrounding country will offer territory for securing stones and minerals or insects, seeds and grains, or harmful weeds. There are other specimens that the ingenuity of teacher and pupils will discover and use.

It is possible to include in the school museum many models that will prove useful. This fifth grade class made a complete series of land-transportation vehicles, from the primitive dray to the present day airplane.

Models should conform to a definite scale. Most pupils welcome the opportunity to give expression to their creative skill. Every article in the collection should be labeled so

that it may easily and quickly be identified. The information should be typewritten or printed clearly with ink.

Museum materials should arouse a desire for investigation. They are part of the world in which the children live. Not all communities are blessed with such wonderful collections of educational exhibits as Chicago, Boston, New York, Philadelphia, St. Louis, Milwaukee, San Francisco and a few other cities; but there is scarcely a city of any size that does not pride itself on a museum of some sort.

The great museums throughout the country have also developed a system of extension service, similar to the branch library service, to meet the needs of boys and girls of the public schools. This service was made possible in 1911 from Chicago's Field Museum.¹ Exhibits and materials gathered from every section of the world were labeled and installed in portable cases. These were sent daily into the classrooms of the public schools.

The impression made upon the mind of the writer who first visited Field's Museum that same year as a grade school child would justify such expense for similar impressions upon the minds of other children. A whole world of abstract ideas suddenly became real.

Models of ancient ships, such as Columbus' Santa Maria, or of ancient cliff dwellings, have a tendency to bring into the visual comprehension of pupils concrete truths. The model holds a popular place in modern education, especially in the project method of teaching. One of the most effective ways of learning

1. Anna Verona Dorris, Visual Instruction in the Public Schools, p. 89.

is by doing. A child knows a great deal more about Eskimo life and customs after he has actually built a model Eskimo village. This "doing" became possible only after accurate mental pictures of the natives, kayaks, sledges, and so on had been formed by the child. The pictorial representation was a necessary step, but the project surpassed in the total educative effect.

Much of the value of the museum procedure in the classroom comes through actual demonstrations by the pupils, rather than by the teachers. This develops a sense of their own responsibility. Pupil participation involves the handling of the materials by all the pupils, such as a boll of cotton. So far as possible materials should not be kept under glass cases but should be made available for examination by all pupils.

Pupils must be instructed on what to observe. They must be prepared for the experience and be interested in the materials. We only observe factors that are meaningful to us. The museum lesson should open new avenues of interest to the pupil.

The following list will suggest a few of the items, objects,
¹ specimens, and models that can be included in the school museum:

Animals: rats, mice, rabbits, kittens, squirrels.

Aquarium: fish, tadpoles, frogs, turtles, snails, water plants.

Art: pictures, paintings, sculptures, posters.

Building Material: brick, tile, wood, metal, paint, nails, asbestos, hardware.

Coins, money and stamps: domestic and foreign, ancient and modern.

Communication: ancient methods and materials, telephone, telegraph, radio.

Curios and souvenirs:

Dolls: ancient and modern, domestic and foreign, clothing, equipment.

1. Harry C. McKown and Alvin B. Roberts, Audio-Visual Aids to Instruction, p. 62.

J. H.
I.

Fabrics: ancient and modern, domestic and foreign
Flowers: local and national, wild and domesticated,
 fresh and pressed
Foreign articles: money, foods, clothing, stamps,
 posters, pictures, games
Indian relics: arrowheads, flints, hatchets, pottery
Insects: bugs, moths, butterflies, grasshoppers, flies,
 larvae, eggs.
Jewelry: ancient and modern
Plants: flowers, ferns, grains, cacti, vegetables,
 bulbs
Post cards and illustrated travel folders:
Pottery: vases, bowls, birdbaths, water bottles, ash
 trays
Publications: books, bulletins, magazines, newspapers
Raw materials: cotton, flax, silk, foodstuffs
Rocks, stones, minerals, ores, fossils, petrified wood:
Seeds and grains:
Shells: conch, scallop, oyster, clam, sea horse, crab,
 coral
Toys and playthings: domestic and foreign, ancient and
 modern
Weeds and weed seeds:
Wood: various kinds, cut to show grain, knots, bark,
 unusual growths, cones, nuts, buds, pulp,
 sawdust, diseases

A long shelf located under a window near the front of the room served as our "museum shelf". As our social studies program progressed from one topic to another, a continuous process of change went on. The pupils were encouraged to bring related materials which displaced those which already had served their purpose. The chairman selected to serve at frequent intervals supervised an orderly arrangement of materials. Those skillful in modeling with clay made models. The diorama box has proved to be an effective way to make use of models of various sizes.

A background composed of earth, water, shrubs, trees and grass may be constructed on a suitable base or in a box. The water is represented by a piece of window glass painted on the underside. Soil is shown by pebbles, sand and sifted earth on glue; irregular heights by plaster of Paris on pieces of propped

up screen; grass by hemp, bristles, flax, dried grass or excelsior properly trimmed and colored; trees and shrubs are cut from sponges or constructed of twigs and glued-on paper leaves. A painted background, preferably semicircular in shape, helps to give a very realistic appearance to the group. The exhibit should be placed in a covered and glass enclosed case, and may be electrically lighted.

A Mexican diorama, made as described above, proved an interesting correlation in art, and increased the interest in the study of Mexico. The similarity to the Spanish costumes seen at home and in fiestas struck a responsive chord in the costume study necessary to fashion the dolls for the diorama.

CHAPTER VI

THE MOTION PICTURE

The history of the visual aid program is well described by Jim Killingsworth, Tribune staff writer, in the following article:

"Starting from scratch less than two years ago, Hillsborough County now can claim one of Florida's finest visual education departments - one that can hold its own with any in the country.

W. F. Lloyd, director of the county's brand new consolidated Instructional Materials Center - located in what used to be the book depository building at 3733 Florida Avenue - admits he may be prejudiced in claiming Hillsborough ranks one-two with Dade County.

But the accomplishments of his department back him up. In fact, the progress in four school semesters is little short of phenomenal.

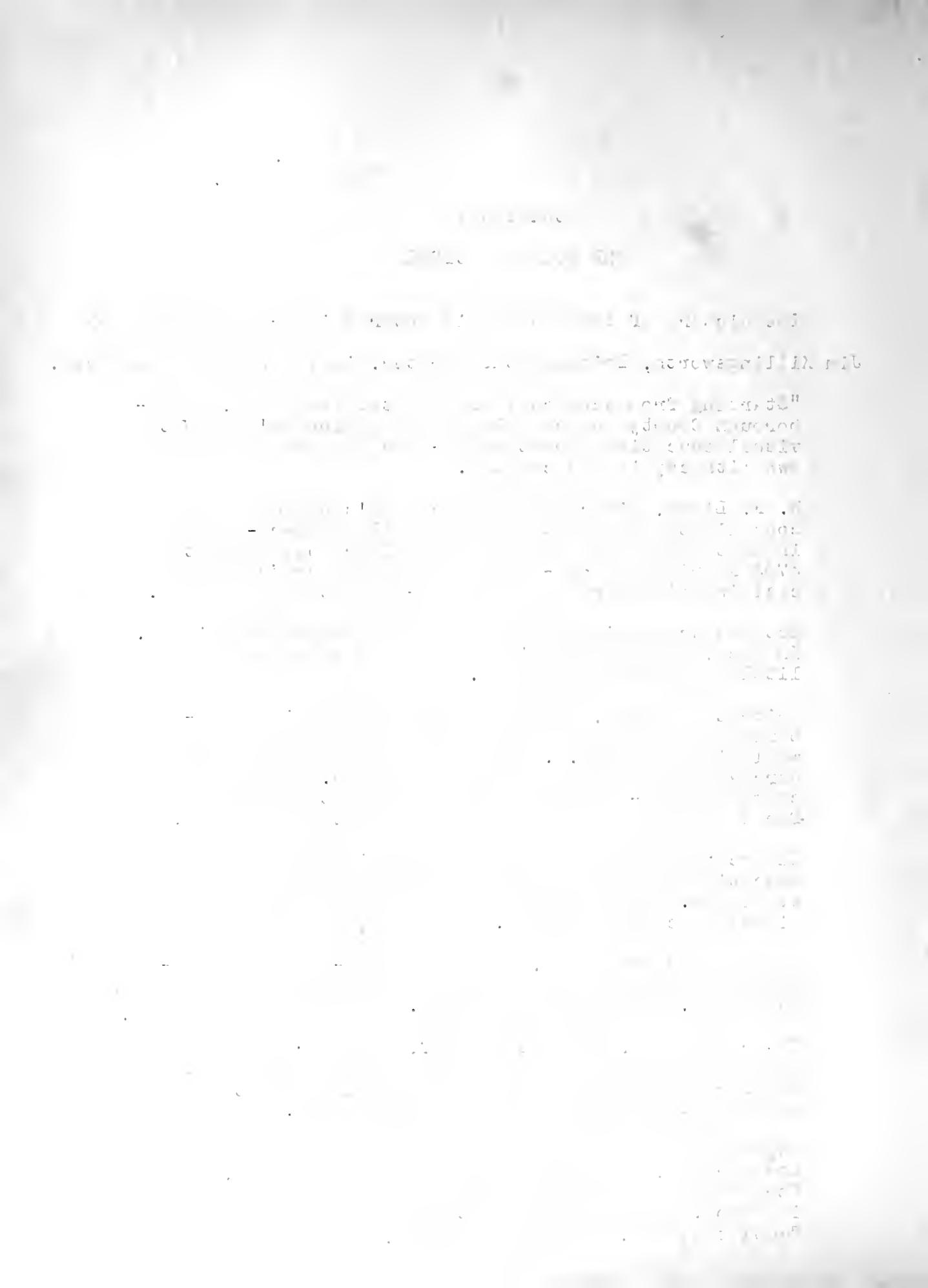
Prior to January, 1946, visual education in Hillsborough County was confined to a handful of the wealthier schools . . those which could afford the purchase of a motion picture projector. There was no coordination - no attempt to equalize the facilities for showing films in schools throughout the county.

The schools with projectors ran their own visual education program, renting what films they could find available. Most schools had no projectors; hence, no visual education program.

But this fellow Lloyd, a chunky, good-natured mathematics teacher at Hillsborough High School for 18 years, had ideas. And he was stubborn.

The combination began to pay off in January last year, when he was given permission to devote half-time to the formation of a visual education department, and he was given a spare room at Hillsborough.

Starting with little more than a couple of Mickey Mouse reels, Lloyd began to pound the pavement, asking for donations of films or money from business firms in Tampa. He pestered the County School Board, and Tampa trustees. He urged schools, especially those



in rural areas, to buy projectors.

A committee of eight teachers and principals was formed, to gather data for new visual aid materials, to pass on new films to be purchased, and to help in the crusade to develop modern education methods in Hillsborough schools. Lloyd gives most of the credit for his department's progress and expansion to the untiring work of the committee.

In less than two years Hillsborough County jumped from obscurity to the top in visual education.

The film library now boasts 302 reels - worth \$16,000, including 250 different titles. Every field of education, at all grade levels, is covered - everything from Adventures of Bunny Rabbit to Atomic Energy.

This year the County School Board has appropriated \$3350 for the purchase of more films.

Now, 72 of the county's 91 schools have their own movie projectors and are participating in the visual education program - more than double the number with such facilities in early 1946.

Lloyd's department filled 3000 bookings last year - and has 3600 requests for films already this year.

Latest step in the program expansion was the move from an empty classroom at Hillsborough to its present location. It came about when the School Board decided to combine the jobs of county book depository manager and film library director - and give Lloyd both of them. The barnlike building at 3733 Florida Avenue was turned over to him, and soon it was no longer a barn.

A spanking new paint job, some alterations, and a general renovation - all courtesy of the county school maintenance department - and Lloyd has a Hillsborough County Instructional Materials Center the school system can be proud of - and is.

The center includes a display room, for samples of educational literature and audio-visual equipment; a projection room, where Lloyd previews new films for teachers and principals; a film library, an office, and a huge storeroom for the thousands of new books that are made ready for distribution to the schools."1

1. Tampa Tribune, Sunday, November 23, 1947, p. 9-D.

• CONSIDERATION OF THE LINEAR LAW

• The linear law is a very simple law.
• It is a law which is based on the fact that
• the change in one variable is proportional to
• the change in another variable. This means
• that if you increase one variable by a certain
• amount, the other variable will increase by a
• corresponding amount.

• The linear law is often used in physics
• because it is a simple way to describe
• the relationship between two variables.

• The linear law is also used in economics
• because it is a simple way to describe
• the relationship between price and quantity.
• In economics, the linear law is often used
• to describe the relationship between supply
• and demand.

• The linear law is also used in engineering
• because it is a simple way to describe
• the relationship between force and displacement.
• In engineering, the linear law is often used
• to describe the relationship between stress
• and strain.

• The linear law is also used in chemistry
• because it is a simple way to describe
• the relationship between concentration and
• reaction rate.

• The linear law is also used in biology
• because it is a simple way to describe
• the relationship between population density
• and resource availability.

• The linear law is also used in psychology
• because it is a simple way to describe
• the relationship between stimulus intensity
• and response strength.

• The linear law is also used in sociology
• because it is a simple way to describe
• the relationship between social class and
• income level.

• The linear law is also used in political science
• because it is a simple way to describe
• the relationship between political power
• and economic inequality.

The administrators of the Tampa Schools were eager to encourage the use of all types of audio-visual aids to improve the teaching program. A coordinator was appointed to assume the responsibility for the Hillsborough County Film Library. The routine is: All materials are collected in the library, classified and labeled. A teacher desiring a film may go to the library and examine the list of films available in his area of interest, or he may search the film catalog in his particular school. Having decided upon a film, he fills in a film request form on which is indicated the title of film desired, the date of use, and the time of showing. If the school has a visual-aid chairman, when he receives confirmation of the films availability, she informs the instructor and schedules the showing on a daily film sheet.

Films and filmstrips are previewed, audio materials auditioned, and study guides examined before material is used. After using a film, the teacher fills out a film evaluation form.

Instructors are urged to use only material that has a definite instructional purpose. Encouragement is given toward greater use of non-projected aids as maps, charts, globes, pictures and field work. Included in the library of our school is a collection for use by teachers of books and periodicals on the utilization and evaluation of audio-visual materials.

In the same manner, films may be procured from the Gainesville, Florida, Film Library by paying the necessary postage. The Encyclopaedia Britannica Catalog of Films is correlated to the work as outlined for each grade. These can be

had for a small fee. By ordering them in advance, the class was more apt to receive them at the time necessary to correlate them to the subject matter. The visual education chairman served as coordinator of the program. She was also a regular classroom teacher, and found it necessary to train several of her older boys to take care of the projector and films.

In order that the school year 1947-1948 might prove more interesting and profitable, especially in the field of Social Studies the following list of films was ordered. The work was outlined in advance and divided into six periods of six weeks each - I, First Period; II, Second Period, et cetera. The Arabic numbers indicate each succeeding week in the period as I,1 or I, 2, et cetera.

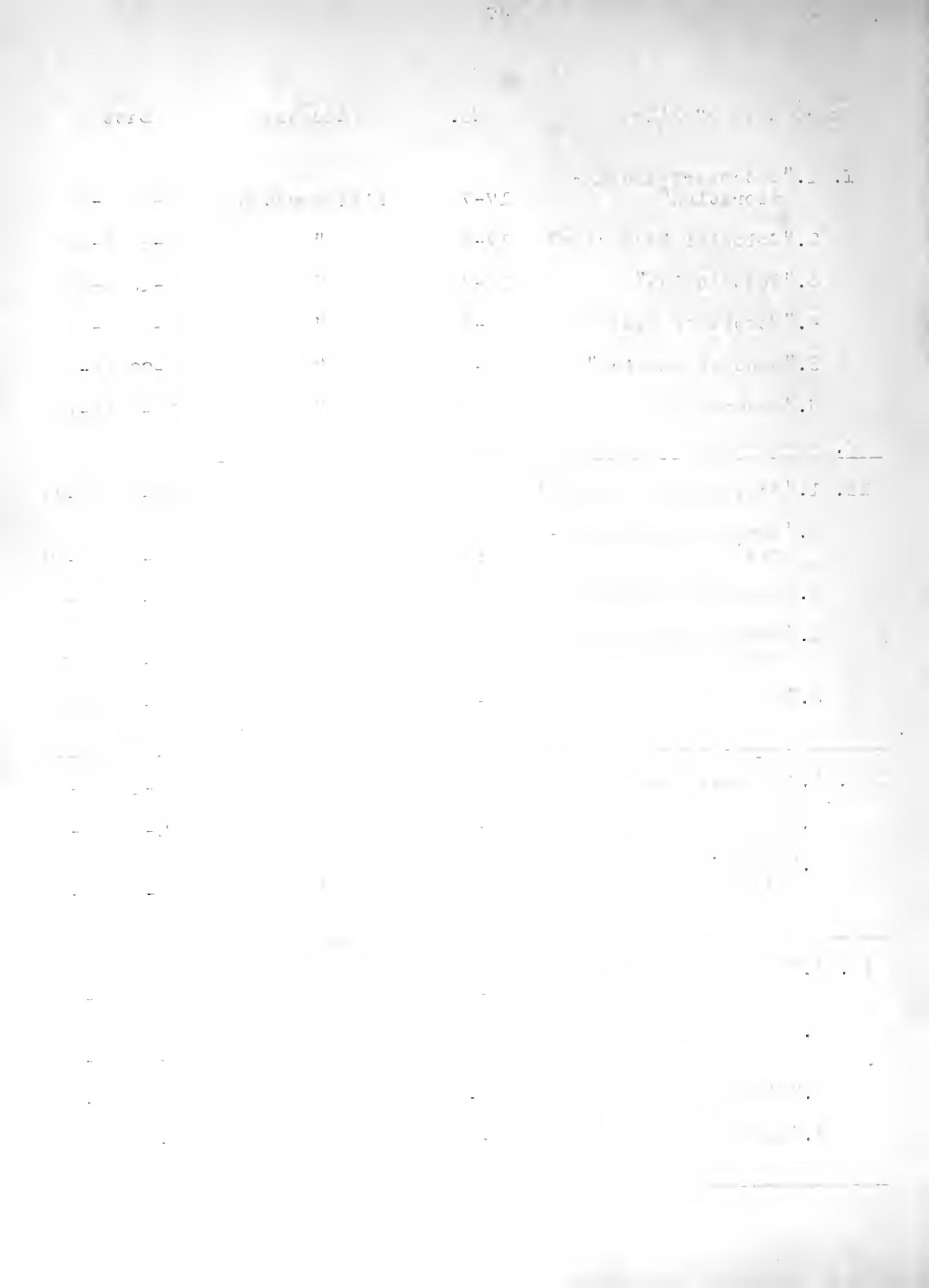
The topics for the six periods outlined in Social Studies were:

I.	Columbus	Spanish Explorations
	Mexico	Indians
	Discovery	
II.	Virginia	Jamestown
	Cotton	English Settlements
	Peanuts	Pilgrims
III.	Fisherman	Shoes
	Colonial Life	Cotton)
	Puritans) Cloth Wool)
	Boston	New England
	Florida	Middle Atlantic
	Seminoles	States
		New York City

IV.	Clothing	William Penn
	Steamboats	Quakers
	Canals	Philadelphia
	Coal	Lewis & Clark
	Steel	
	George Washington	Mt. Vernon
	Revolution	Washington, D. C.
V.	Civil War	Dams
	Abraham Lincoln	Cotton
	North Central States	Chicago
	Transportation	Corn
	Railroads	Framing
	Great Lakes	Flour
	Automobiles	Mining
	Lumbering	
	Dairying	
VI.	Western Views	Central America
	South West Indians	West Indies
	Cattle	Aztecs
	Yellowstone	Gold
	Sheep	Salmon
	Mormons	National Parks
	California	Alaska
	Bananas	Hawaii
	Panama	Canada

The film order was placed in the hands of the visual education chairman for the following films:

Exact Name of Film	No.	Address	Date
II. 1."Discovery and Exploration"	17-7	Hillsborough	9-2 9-8
2."Colonial Expansion"	17-8	"	9-8 9-15
3."West Indies"	11-7 -	"	9-15 9-22
4."People of Mexico"	12-2	"	9-22 9-29
5."Central America"	11-8	"	9-29 10-6
6."Argentina"	124	"	10-6 10-13
<hr/>			
II. 1."Northeastern States"	11-1	"	10-13 10-20
2."New England Fisherman"	13-1	"	10-20 10-27
3."Colonial Children"	16-5	"	10-27 11-3
4."Early Settlers of New England"	11-1	"	11-3 11-10
5."Orange Grower"	13-4	"	11-10-11-17
<hr/>			
III. 1."Southeastern States"	11-2	"	11-17 11-24
2."Middle States"	11-3	"	12-1 12-8
3."Planters of Colonial Virginia"	?	"	12-8 12-15
<hr/>			
IV. 1."Washington World Parade"	11-3	"	1-12 1-19
2."Flatboat Men of the Frontier"	17-3	"	1-19 1-26
3."Life in Old Louisiana"	17-4	"	1-26 2-2
4."Northwestern States"	11-5	"	2-9 2-16



Exact Name of Film	No.	Address	Date
V. 2."Canada High Spots"	11-5	Hillsborough	3-2 3-9
3."Pioneers of the Plains"	17-5	"	3-9 3-16
4."Wheat Farmer"	13-2	"	3-16 3-23
6."Cattlemen" *	13-5	"	3-30 4-5
VI. 1."Southwestern States" *	11-4	"	4-5 4-12
2."Far Western States"	11-6	"	4-12 4-19
3."Navajo Indians"*	12-1	"	4-19 4-26
5."People of Hawaii"	12-7	"	4-26 5-3

Classroom Instruction Program Date - 1947
 Teachers Name: Grace White I First Period
 9-2 to 10-27

Exact Name of Film	No.	Address	Date
I. 1."This Amazing America"*			
or			
"Southern Chile"		Gainesville	9-2 9-8
2."Heart of the Inca Empire		"	9-8 9-15
3."Mexico City"		"	9-15 9-22
4."Argentina Primer"*	(Technicolor)"		9-22 9-29
5."Proof of the Pudding"		"	9-29 10-6
5."America the Beautiful"*		"	10-6 10-13
II. 5."Cotton from Seed to Cloth"		"	10-13 10-20
6."Cotton from Seed to Cloth"		"	11-17 11-24

Exact Name of Film	Address	Date
III. 2."For Health and Happiness"	Gainesville	11-24 12-1
5."Day at Silver Springs"*	"	12-15 12-22
6."Birds of Florida"*	"	1-5 1-12
IV. 4."Chance to Lose (Safety)	"	2-2 2-9
6."Forests Forever"*	"	2-16 2-23
V. 1."Railroadin"*	$\frac{1}{2}$	" 2-23 3-2
2."Ohio Travelog No. II	"	3-2 3-9
3."Story of Cooperative Wool"	"	3-9 3-16
5."The Story of Sugar Refining"	"	3-23 3-30
6."Ride 'Em Cowboy"*	"	3-30 4-5
VI. 1."Brazil"	"	4-5 4-12
2."Glacier National Park"	"	4-12 4-19
3."Yellowstone Park"	"	4-19 4-26
4."Arizona"	"	
5."Alaska's Silver Millions"	"	4-26 5-3
6."Across the Border"	"	5-3 5-10

Additional films ordered and shown in addition to this list
were: (Gainesville)

- "How to Study"
- "Maps are Fun"*
- "What Makes Rain"
- "Ball Handling"
- "Know Your Library"
- "Bill of Rights"

Mr. John L. SIBLEY, Secretary.

It is $\frac{1}{\sqrt{2}}(1 + i) \in C_2^{\text{unit}}$. So $\alpha = 1$.

• 11 •

"*W. longirostris*".

1970-1971
Yearly
V

"Our Constitution"
"Our Declaration of Independence" *
"Development of Transportation"
"Finding Your Life Work"
"America's High Spots"
"Conservation of Natural Resources"
"Seventh Wonder of the World"
"Story of our Flag"
"Washington Parade" *
"The Amazon Awakes" *
"Ohio Travelog, No. II" *

(Hillsborough Film Library)

"Earth in Motion"
"Solar Family"
"Thrushes and their Relatives"
"Birds of Prey"
"Using the Classroom Film"
"French Canadian Children"
"Peru"
"Brazil"
"Chile"
"The Amazon Awakes"
"Panama Canal"
"Central America"
"Pan American Bazaar"

(* Those liked best are starred.)

It was found that the film "Development of Transportation" gave a renewed interest in a transportation project that had been started previously - a frieze. Interest lagged before, but after the film showing, the frieze was brought to completion in a few days.

The film "Westward Movement" served as a good introduction to the study of western migration. The term would have been less meaningful to them.

"Northeastern States" provided a review on their understanding of industries of that section, one of the first groups studied earlier in the year. It gave them a proper concept of the life of the fisherman of that region. In this way previous knowledge was corrected and clarified. Many incidental details were por-

trayed not found in textbooks.

"Navajo Children" was especially liked by the children. It gave them pleasure, and also caused that study of Indian life to be more meaningful. It helped to develop skill in reading and language. Library books showed that choice of reading for several weeks.

The cotton fields shown in the film "Southeastern States" were much more realistic than the small illustrations of the Social Science books. It encouraged some children to express themselves, and describe scenes as one had seen in Georgia where he had formerly lived. The boy was very timid, and scarcely ever wished to say a word. When he found he was the only one that had seen a cotton gin, he described it to the class. Since that day he has taken an active part in the class.

The films pertaining to the western states offered an experience for children who will probably have few opportunities to travel. It stimulated their imagination to a great extent. Most of the children had never seen a mountain. The art lesson planned previous to the showing of the film was quite a failure - a landscape with mountains. They appeared more like the teeth of a saw. After seeing them in reality on the film, the activity that followed resulted in more realistic views of mountain scenery.

A proper understanding of the life of the cowboy was realized from "Cattlemen". Some of the glamour and excitement of the movie ideal gave way to the realization of the valuable work done by them in the west, and also in Florida. Their previous knowledge was corrected and clarified. The cowboy songs taught in music

were sung with a better concept of their word value and rythmn qualities.

In Science, the motions of the earth had proved most difficult to teach - even with using such aids as the globe, charts, etc. The film "Earth in Motion" helped greatly in overcoming these difficulties. A list of questions given at the end of the chapter in the Science book had meant very little to many - the terms "rotation" and "revolution" were confused. After the film had shown this in a very interesting way the test was repeated. The result showed a great increase in knowledge of the concepts of the causes of day and night and the change of seasons.

The following paragraphs indicate how much better conception was gained after viewing two films - one about the steel industry and the other concerning Arizona.

Ann and Sherry are slow pupils. The first writing was given after reading the text. The second viewpoint was written after seeing the film presented on the subject. Frances, one of the best pupils in the class gained even more from the film.

Ann Spiller

The Story of Steel

Jan. 30, 1948

"Kelly got his patent back. Kelley made carbon steel. A convertor is a car. William Kelley wanted to invent steel."

Ann Spiller

Steel

Feb. 5, 1948

"Savages first discovered iron, and Arabs made steel. Now days we find some iron in mines. To make steel we mix limestone, ore and coal together. Fureces made iron to steel. Some steel is pressed some steel is cast most steel is rolled. You prouw steel into ingots. You can make machine out of iron and steel. In the early days locomotives were made from iron and steel and dams are sometimes made from steel. You use steel for armed forces. Airplanes are made from steel and steep towers. Bars on churchs are made from iron and steel. Steel is always at work."

Sherry KantorArizonaFeb. 23, 1948

"I expect to see the Grand Canyon and the Dam. There is the painted Destered and captus that I would like to see. I would like to see them earagate the land too."

Sherry KantorArizonaFeb. 25, 1948

"Yesterday we went to Arizona. We saw Boulder Dam. It is the largest Dam in the world. It is as wide as 100 times a six foot man. We also saw Grand Canyon. It looks like a painted picture with lines all over it from the sky. We saw many sugar beet fields it looked like sugar beets are the mane producks but they arent. We also saw the painted Desert. It has some cactus that are forty to fifty feet tall, with brown sand and weads. It also has some stone hills. The sunsets are very perty."

FrancesArizonaFeb. 25, 1948

"Arizona is one of the largest mining states there are. Gold, copper and silver are the most important minerals. There are open-pit mines and underground mines. One of the largest gold mines in Arizona is in an old creek. Most of these mines were started long ago by mining prospectors. Other minerals of Arizona are zinc, lead and asbestos.

Scenes in Arizona are very beautiful like Boulder Dam. The largest dam there is. This dam has water in it from 2,000,000 people. And 2,000,000 acres are get water from here. There is enough concrete in Boulder Dam that it would make a highway across the United States. Boulder Dam was made by backing up a river. The Lake that is backed up by the dam is Lake Mead.

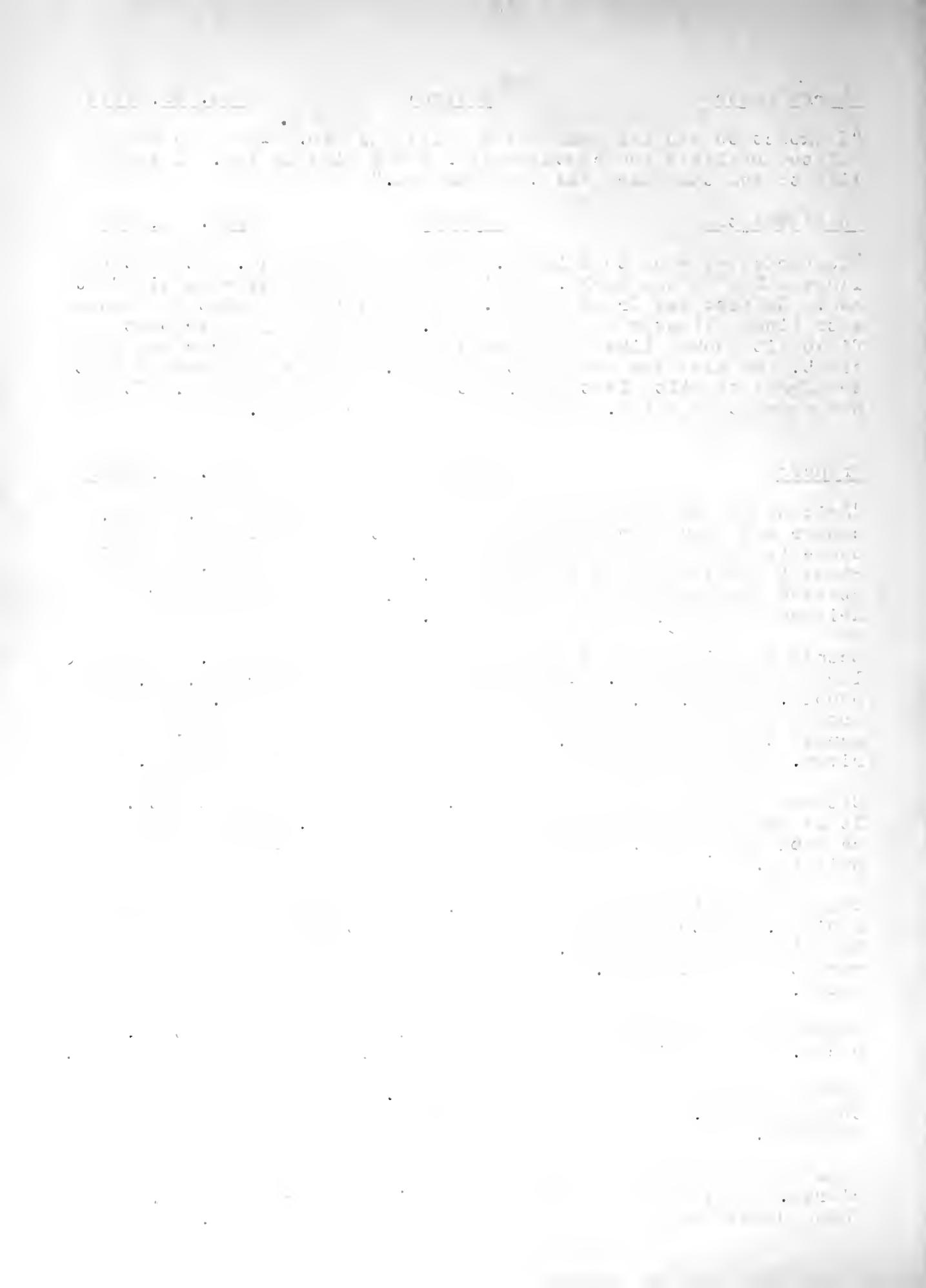
Cities in Arizona are very modern. Yuma is a very hot city. It is one of the hottest in the United States. Phoenix is the capital of Arizona. Tucson is a very modern city with tall building.

Grand Canyon is a beautiful place. These canyons were cut by a river. It took millions of years to cut these canyons because the river was very small. In some places these canyons are more than a mile deep. You can only go down these canyons by mules.

Painted Desert looks like a artist have poured his paint on.the rocks. It is painted with colors of red, blue, yellow and green.

There are a lot of Missions in Arizona. These Missions are more than a church. People that are sick are cared for in these Missions. People that are poor lives here also.

Some of the products in Arizona are sugar beets, asparagus and citrus. Asparagus grow seven inches in twenty-four hours. These plants will not grow unless they had irrigation.



Cactus grow in Arizona twenty feet tall. In these cactuses there are water. There are a lot of different kinds of cactus in Arizona.

They are a lot of old things here like petrified forests. These are trees that have turned to stone."

The following outline indicates desirable procedures for using motion pictures:

I. Preparation: (Before class meets)

1. Teacher selects film and previews it so as to plan lesson.
2. Teacher checks to see that projector, screen, current, blackout arrangements, etc. are in readiness.

After class meets:

1. Pupils are prepared to see film.
2. Purposes are set up.
3. Leading questions are asked.

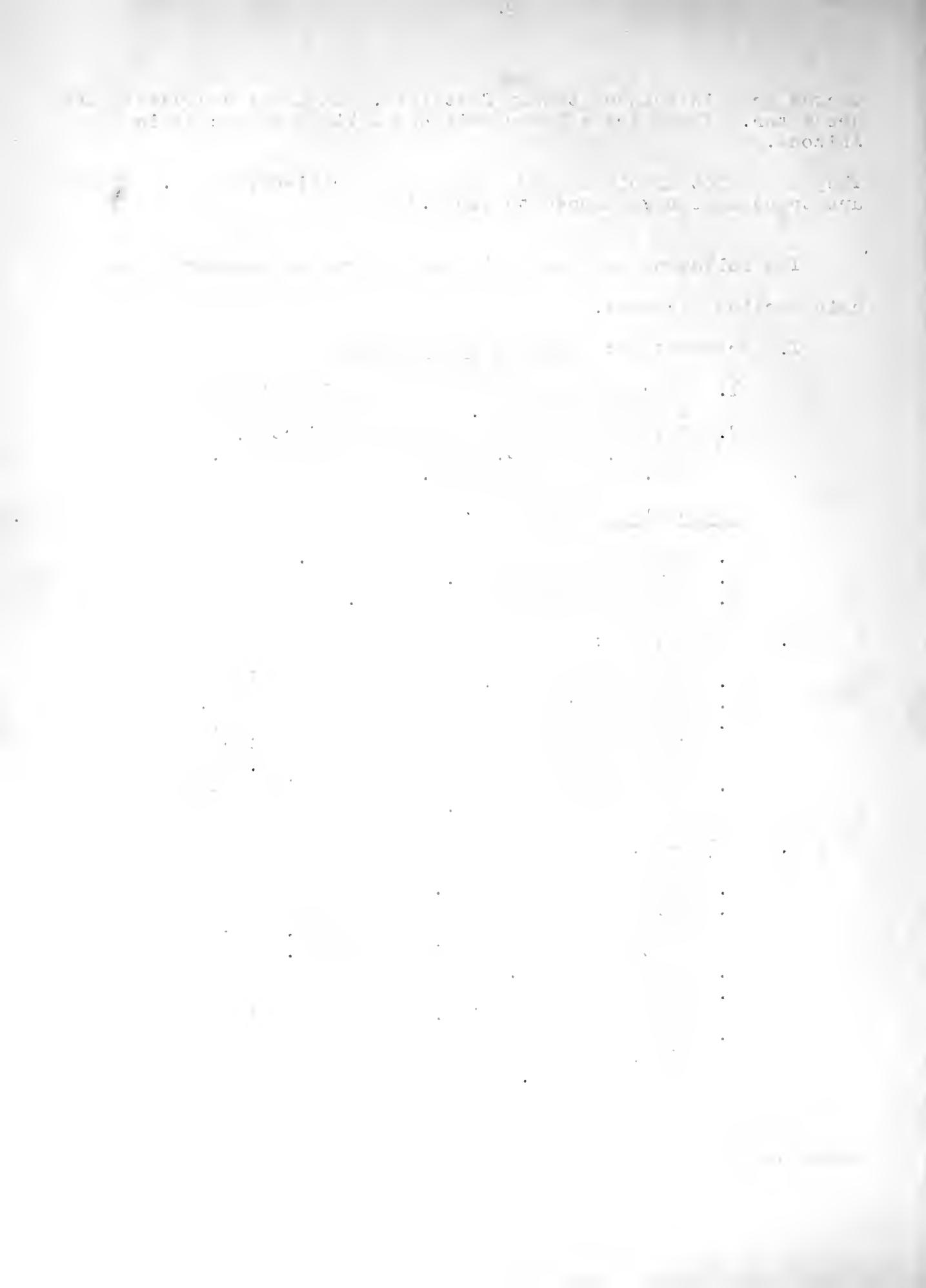
II. Presentation:

1. Show entire film.
2. Show selected parts for intensive study.
3. Project "stills" (if projector permits) for study of details and to allow discussion of a particular picture in the film.
4. Run sound films silently to permit teacher or pupil commentary.

III. Follow-up:

1. Discuss film at once.
2. Give brief test to see if pupils got adequate and correct information. Re-run part or all of film if necessary.
3. Summarize film.
4. Organize class for further research in library or community.
5. Engage in other activities stimulated by film, as drawing, creative writing, and dramatization.

In order to evaluate a film for school use, each of these might be rated at twenty points:



1. Accuracy
2. Appropriateness to grade level
3. Application to local course of study
4. Technical qualities
5. General teaching value

Free films should not be shown in the classroom until they have been previewed and approved. Free films are issued by commercial concerns to advertise certain products. Some include propaganda. Great caution should be observed in the use of all free films. Those produced by governmental agencies are usually not objectionable and some produced by commerical firms are of value in the school program.

Schools should purchase sound projectors, although they are considerably more expensive than silent projectors. The reasons for this recommendation are: (1) The sound film is more powerful, (2) Most of the best films now being produced are sound films and cannot be shown on silent projectors, (3) Both sound and silent films may be shown on a sound projector. The 16mm. size, whether sound or silent, is the only size recommended for public schools.

For the average classroom a screen 36 to 48 inches in width is sufficiently large. With a two inch focal length a projector 20 feet from the screen will produce a picture 45 inches in width. Larger screens for an auditorium may be made from white cloth stretched to a frame. Small screens for classrooms may be made from celotex or other kinds of fiber board by cutting to desired dimensions, framing, and painting with flat white paint.

Curtains or drapes are perhaps the most satisfactory means of darkening a room for projection. Blackout roller shades may

be used provided they are installed with wood or metal channels to prevent light leakage around the edges.

Motion pictures require a darker room than still pictures and colored pictures require more darkness than black-and-white.

Television is rapidly being introduced in some centers and no doubt will be widely used in schools in the near future, but it will not displace motion pictures as seldom television programs are given on a desired topic at a suitable time to fit in with teaching plans. This same difficulty is encountered by teachers who want to use the radio.

Visual aids are being distributed by manufacturers, producers, service groups, local schools, colleges and universities, federal government departments and agencies, libraries, churches, museums, and commercial dealers. The visual aids may be purchased, rented, or borrowed. In many cases they are available with the user paying only the cost of transportation.

A film library must be efficiently operated or there will be a continual breakdown in the supply of materials. The four main activities include: (1) Method of film circulation, (2) Booking system, (3) Central control of films and equipment, and (4) Systematic inspection of both films and equipment.

CHAPTER VII

THE STILL PICTURE

Projected still pictures as instructional aids have to have their merits and limitations. Slide films and slides and the necessary projection equipment cost less than motion picture film and equipment. They are more readily adapted to variations in presentation. There is a simplicity in operation to be considered. However the inability of the still picture to portray motion limits its use.

A stereograph consists of two photographs of an object¹ or scene taken simultaneously by a stereoscopic camera. Both eyes see the same object, but the right eye sees more of the right side of the object and the left eye more the left side. The brain puts the two images together and sees the whole object. Thus we gain impressions of both solidity and relief.

The stereoscope is an optical instrument with a similar pair of lenses separated by a small wooden partition to keep the right eye from seeing the left view and the left eye from seeing the right view. When the stereograph is seen through this instrument, an impression of depth is received. This fact is the secret of its charm and educational value as it creates an illusion of reality. Since it is a photograph of an actual

1. Anna Verone Dorris, Visual Instruction in the Public Schools, p. 135.

situation in life, all the great wonders of nature from the remotest parts of the earth can be brought truthfully before us.

The writer found it very helpful to keep one reading table for this purpose, with four stereoscopes available, and a box of stereographs related to our social studies work of the week. In this way all pupils had an opportunity to see the views presented comfortably seated in groups of four. It is not a desirable practice to start an appropriate view through a class during a recitation. By the time the tenth pupil receives the traveling stereograph, five or ten minutes have elapsed since the point of interest was explained. One of two things will happen: (1) if he is interested in the discussion he will pay little attention to the passing pictures, or (2) he will enter another world and become segregated from his group. When he returns to his class he has lost the thread of the discussion. The teacher's part is to guide the pupil so that all by himself as he studies the stereograph he will absorb the information it affords. It is often a good plan to write on the board a few leading questions to be solved when studying the pictures during the preparation of a lesson. This will insure both economy of time and efficiency in learning.

Our school library has a general collection to meet the various needs in the teaching of social studies. This class enjoyed most the stereographs telling the story of the life of our Indians of the Southwest. A wall mural, painted by various groups, resulted in a lifelike portrayal of the Indians as seen through the stereoscope.

Slides fall into two general types, (1) photographic, and (2) handmade. Photographic slides can be made of any object that can be photographed. To make a glass slide of a snapshot, you place the snapshot negative in contact with a sensitized glass plate, expose it to the light, and then develop, print and fix just as you would do regularly on a piece of sensitized paper. To protect the processed glass surface from dirt and scratching, you place a clear piece of glass over it. The two pieces of glass are then taped along the edges and the slide is ready to use. Commercially produced slides may be enriched by a few items of your own.

Handmade slides are inexpensive and can be made by the pupils. You can take pressed leaves, flowers, butterflies, and other items and make them into slides. The production of handmade slides is a valuable learning activity and pupils enjoy slides they have made themselves. The teacher may obtain a set of detailed directions, such as the Eastman Kodak Bulletin, on Lantern Slides. Even though Grandmother knew the standard slide projector as a magic lantern, this method of using pictures for teaching has many possibilities yet today.

Lesson Procedure

With the use of film strips or slides:

This type of lesson has four essentials:

1. Preparation
2. Projection
3. Discussion
4. Follow-up

A. Teacher Preparation

1. Before any film strip or set of slides is projected in class, the teacher should preview it. This preview is necessary for three main reasons:
 - (a) to be sure that the film strip or set of slides is suitable for this class - up-to-date, well prepared, describing details which are on the school course and which are being studied at this stage of the school year.
 - (b) to aid the preparation of the class, by studying information essential to the appreciation of this film strip or set of slides.
 - (c) to enable the teacher to point out certain things to look for and possibly what to disregard.
2. Prior to the projection, the teacher should arrange to have projection equipment on hand, set up and ready for use.
3. Teacher preparation also involves a knowledge of the type of discussion. In this discussion the teacher should ask questions which pupils answer orally.
4. The last stage of teacher preparation concerns the follow-up. Here the teacher prepares in advance questions, notes, or assignments.

B. Pupil Preparation

1. Before any new work is presented, the pupil must have sufficient background to enable him to appreciate the new information.
2. Pupils are to be told what the essentials are that they are to look for in the pictures.
3. Pupil-assistants should be previously trained if they are to do the projecting.

Projection

1. Pupils should be seated where all can see the pictures clearly. (Pupils sitting too close to the screen or on the side will see a distorted view of the picture.)
2. The projector may be operated by a trained pupil, or by the teacher. Operation by the pupil leaves the teacher free to make comments, and creates more pupil interest.
3. During projection, pupils should devote their entire attention to the pictures and to the comments of

the teacher. When notes are necessary, they should be made after the projection, during the "follow-up" part of the lesson.

4. A correct number of pictures should be shown. If too many are projected, the pupils will become confused at the many ideas presented. A few pictures, carefully selected and studied, are better than a great many pictures. Usually, ten minutes projection is sufficient for most lessons.
5. Sometimes, a second or even a third projection may take place after the discussion so that pupils may notice details of the picture which they missed originally.

C. Discussion

Here the teacher usually asks searching questions regarding the film strip or set of slides. Pupils answer these questions orally. The teacher should avoid an emphasis on oddities, because this distorts the picture of the lives of the people. A variation of this method is to allow pupils to ask questions. Answers may be given by other students and sometimes by the teacher.

D. Follow-Up

In order to clinch the essentials of the film strip or set of slides, some form of follow-up is necessary. One of the best plans is to give the pupils about ten prepared questions - questions which require one-sentence answers. Other variations are:

1. Free compositions
2. Orals
3. Notes or summaries
4. Special assignments to stimulate interest.

In the next lesson, this written work should be read and briefly discussed, so that errors may be corrected and essentials emphasized.

The opaque projector is used to project onto a screen any non-transparent flat picture, whether mounted or unmounted, or printed in a book or magazine. The flat item is placed in the projector. By means of an intense light and mirrors, an image is reflected on the screen.

It was found a very useful device for showing the pictures from magazines, post cards, and other pictorial work brought to

school. In this manner of projection all the interest of the class can be focused on one picture in unison. It is much more satisfactory than passing pictures around in class, and more exciting. Comments may be made between pictures if preparation for the next one is necessary. The children experience much delight in being able to see their work projected on the screen. It gave more incentive for good work when their story of transportation in art was to culminate in a screen activity.

Opaque projectors enable students to trace the basic outline on a large sheet of paper. This provides a simple means for making large maps or large charts from small ones. The study of South America included the appointment of a committee to make a large wall map by this means. The opportunity to participate by all pupils was given in the room as each contributed in making a pictorial product map of the outline drawing of South America.

It was found more necessary in this type of projection to have the room well darkened than in other types of projection. The largest picture or page which can be projected as a whole is about 6"x 6". If the picture is left lay too long the intense heat will curl the edges.

For conveying information during the recitation period, the slide is valuable in a socialized recitation. Different pupils can assume the responsibility in leading the discussion of the subject which the slide illustrates. The slide recitation was found to develop poise in timid boys and girls and to teach good oral expression in class. Any child is proud and happy when he can get up before his classmates and present an interesting topic

that he knows is new to the rest of the group.

The pictures used in teaching geography should be of several kinds. The photographs appearing in the textbook will be common sources of reference. They need to be supplemented by suitable pictures taken from other sources. The "National Geographic" and "Life" were found to be very helpful. The colored pictures in "Holiday" on North Carolina were appreciated when supplemented by photographs that the teacher had taken of the same places during summer vacation periods.

Photographs give a good background for the appreciation of and understanding of the more expensive visual aids.

CHAPTER VIII

GRAPHIC MATERIALS

Pictures are invaluable aids to the study of geography and the other social studies, but children must be taught to learn from them just as they must be taught to learn from a page of print.¹ Eisen points out that "learning to read in geography" includes reading textual material, the landscape, pictures, maps and graphs; and that each of these reading skills must be taught.

Children need training first in observing pictures, actually looking at them and seeing what is presented. The majority of children do not even glance at pictures in their texts and other books; and those who do notice illustrations fail to learn from them.

Training in looking at pictures intelligently is provided to some degree in any good reading readiness program. A great deal of vocabulary is developed through picture study. Children must be led to interpret what they see and to draw conclusions.

Some schools are rich in picture resources; some are poor. Some have access to a well-administered visual education department; some have no library or visual-aid resources whatsoever. Some have children from homes rich in books; some have children

1. Edna Eisen, "Reading in Geography", XLVII (March, 1948), pp. 107-9.

from homes completely lacking in such materials. But all schools have textbooks, and the textbook illustration is perhaps the most neglected pictorial representation in all the visual aids.¹ Some book illustrations fail to illustrate; many are small, or not clear, or have no valuable meaning. Most books have some good illustrations, and there are few teachers who can not supplement the picture resources through advertisements and other illustrations from their own magazines, or by securing free advertising materials. Care must be exercised in selecting pictures from random sources. Such magazines as The National Geographic, Nature, Life, Time, and The Saturday Evening Post abound in illustrations which help in the study of social studies. Travel folders and promotion materials supplied by chambers of commerce sometimes have pictures which teach.

Pictures collected by the teacher and children should be analyzed carefully. If contributed by a child, they should, of course, be given adequate recognition, but little time need be spent upon them. A good way is to evaluate the picture, and decide with the group whether it teaches something, gives pleasure, attracts attention, or raises a worthwhile question which may be answered through reading.

Pictures serve to arouse interest as well as to give information and provide enjoyment. Children like illustrated books and when a new book is placed in their hands, they should be encouraged to turn through it from beginning to end to get an overall view and satisfy their natural curiosity.

The purpose in studying each picture can be established

1. Mary Clint Irion, "Let's Look at Pictures", Teachers Service Service Bulletin in Geography, No. 4 (April, 1948), p. 2.

the other different parts of the country and different classes of people need
to be considered. In particular, the following points have been made:
1. The first point concerns the question of the relationship between the
various forms of government and the various forms of political parties.
2. The second point concerns the question of the relationship between the
various forms of government and the various forms of political parties.
3. The third point concerns the question of the relationship between the
various forms of government and the various forms of political parties.
4. The fourth point concerns the question of the relationship between the
various forms of government and the various forms of political parties.
5. The fifth point concerns the question of the relationship between the
various forms of government and the various forms of political parties.
6. The sixth point concerns the question of the relationship between the
various forms of government and the various forms of political parties.
7. The seventh point concerns the question of the relationship between the
various forms of government and the various forms of political parties.
8. The eighth point concerns the question of the relationship between the
various forms of government and the various forms of political parties.
9. The ninth point concerns the question of the relationship between the
various forms of government and the various forms of political parties.
10. The tenth point concerns the question of the relationship between the
various forms of government and the various forms of political parties.

through informal discussion by teacher and pupils, with books open to the picture, or through a series of questions placed on the board by the teacher. A picture may raise a question which can be answered only through reading or some other form of additional research.

It is possible to overdo the study of any one particular picture. The same picture may be used at different times for different purposes. A picture must be large in detail as well as over-all size, to be of any value for wall display or for holding up before a group. It is better, as a rule, to place single copies of pictures on the library or browsing table and to allow children to study them individually there or at their desks. Passing pictures from child to child inculcates habits of cursory observation which we wish to avoid.

Pictures hung above the top of the board are effective only as dust catchers. They may serve as decoration or provide cheerful color, but they provide little study value.

Bulletin board display is effective if certain procedures are followed. The bulletin board must be accessible to the children - on their eye-level and in a place where they can stand freely to study whatever material may be mounted there. The display should be arranged neatly and in orderly fashion. It is better to have a few attention-getting pictures, clippings, or objects than to have a board so crowded as to confuse. The display should be changed at frequent intervals. Children can assume responsibility for arranging the bulletin board display and this constitutes a valuable learning experience.

Pictures cut out of magazines, advertising folders, post-

cards, and other single views should be well mounted and labeled with legends. If no other filing facilities are available, related pictures may be placed in large envelopes, labeled and stored in the book or supply cupboard.

Posters are used in schools for various purposes:¹ (1) to teach some specific item of subject-matter, (2) to communicate a more general idea, and (3) to create an aesthetic effect generally related to the curriculum. The poster gives a message, usually without giving details; hence it is based on a simplified idea.

A good deal of time may be wasted in preparing posters, so one should have on hand as many aids as possible. The pantograph enables you to make a scaled-down or scaled-up drawing of any original. Rulers, T-squares, compasses and drawing pens save time.

The visual power of the poster is proved by the use that advertising makes of this medium. The best sources for obtaining posters are travel agencies. Educational institutions such as museums, planetariums and libraries may supply useful examples. The modern poster will utilize any means to increase its effectiveness, and there are an increasing number that make use of photography.

The cartoon is an illustration dramatizing a story by making use of humor, fantasy, grotesque incongruity or satire.² Cartoons that tell their story without the aid of dialogue are best. The eye should grasp the situation and all its implications. It must

1. Edgar Dale, Audio-Visual Methods in Teaching, p. 275
2. Charles F. Hoban, Charles F. Hoban, Jr., Samuel B. Zisman, Visualizing the Curriculum, p. 220.

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have character and humor. It must tell its story with as few strokes as possible.

For the most part cartoons in school have been applied to situations dealing with politics, social conditions, history or economics, as those examples have been most available. But the world of Walter Disney and the Silly Symphony apply this technique in the natural sciences, in music, in story telling and reading as well. This technique should be kept simple. The comic page of the newspaper may be used to good advantage as one series "Highlights of American History". For group work cartoons can be projected as slides or in the opaque projector. These may be made by the pupils.

Publishers issue annual collections of cartoons, such as those by George White in the Tampa Tribune. A cartoon is either for or against something. It does not qualify, and students must be taught a critical approach to the cartoon. Often children miss the point of a cartoon because even the old stereotypes are meaningless to them. Many of them do not know that the donkey symbolizes the Democratic party, the elephant, the Republican party, and that a dove is a symbol of peace. We learn to read cartoons just as we learn to read any other visual symbol, but they must be used with care and intelligence.

A map may be defined as a representation of the surface of the earth, showing relative size and position according to some given scale. A good supply of them is essential. The function of maps is to reduce the scale of areas and distances so that abstract concepts of size and direction may come into the range of reality. Some of the basic concepts of maps are: location,

direction, size, distance and space. The map is an instructional tool and some of the chief standards to serve as guides are:

1. Accuracy
2. Projection
3. Size
4. Detail
5. Color
6. Execution
7. Content
8. Adaptability

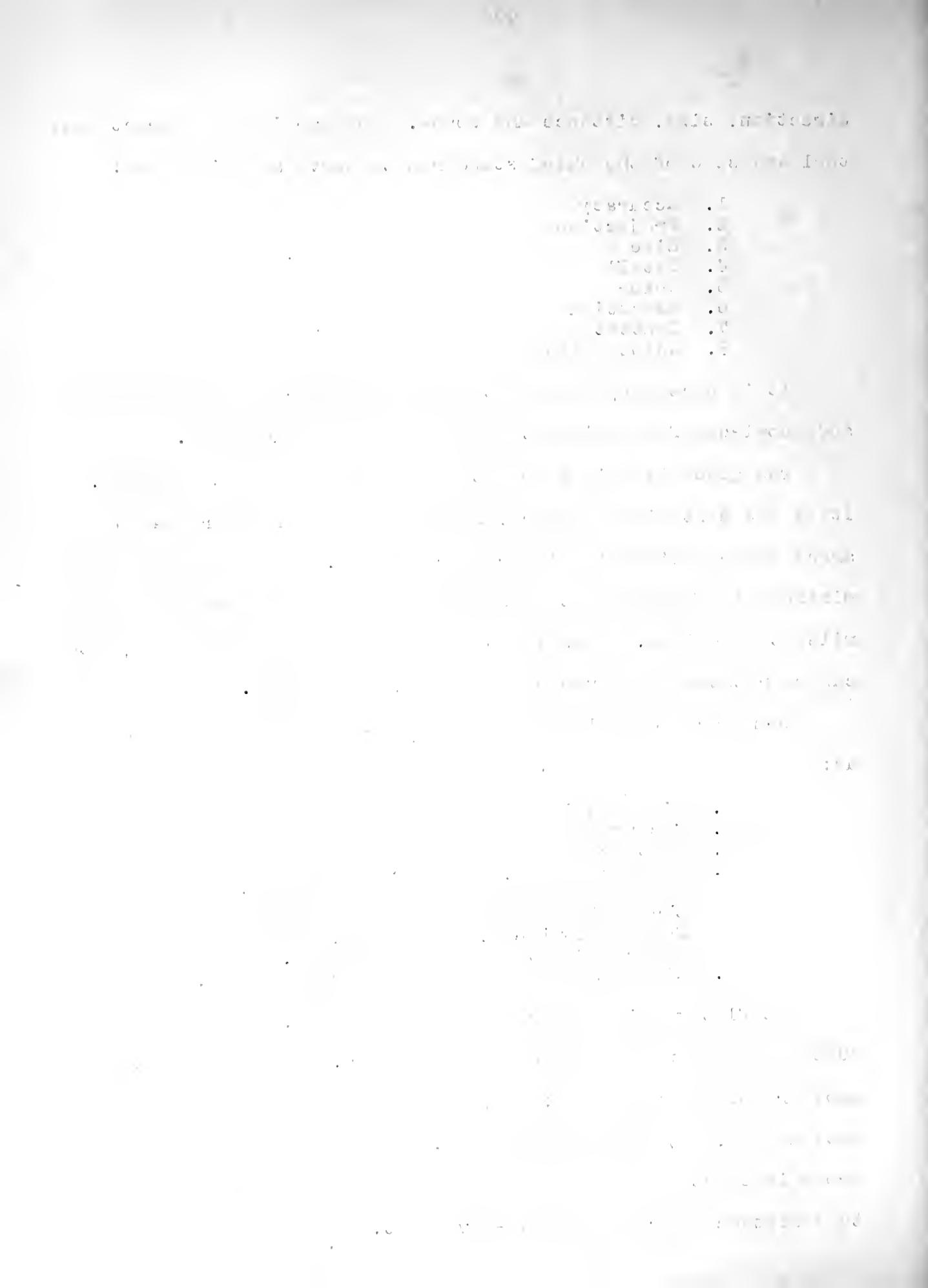
It is necessary for the teacher to acquire this appreciation and knowledge for efficient use of maps as visual aids.

The globe is said to be "the only true map of the world". It is the earth in miniature, reduced in scale, but repeating areas and relationships in true proportion. In the classroom the minimum size should be the 16-inch diameter ball, scaled to 500 miles to the inch. A swivel base is desirable so that the globe can be rotated in a number of positions for study.

There are several ways of showing third dimension in maps as:

1. Hill shading
2. Hachures
3. Contours
4. Layer coloring, as the color sequence adapted for the International Map of the World - blue for the sea, green for the lowlands, and yellow, brown and red for the higher altitudes.
5. All or some of the above in combination.

The flat map is the most abstract of maps, and should be suited to the pupil level of comprehension. Physical-political maps are of several types: (a) the wall map, (b) the blackboard outline map, (c) the projected map. The wall map is best for group instruction and study, with the important details readable to a distance of about twenty-five feet.



The use of blackboard outline maps is unlimited, as when used by the teacher, they have the advantage of increased attention value. A better use is by the student himself.

Special maps can be shown with the opaque projector. The chief types are outline maps, textbook maps, or traced maps. Outline maps are especially valuable in testing. Textbook maps are for individual reference and study related to text material. For tracing, maps can be projected on the blackboard, or on board or paper. They may also be drawn on transparent glass, as the classroom window.

Many road maps are available and contain a wealth of information as distances between cities, important landmarks and historical facts.

With the assistance of the science teacher, electrified maps can be illuminated for visual dramatization.

Decorative maps might often be placed on wall surfaces in corridors as an opportunity for visual material.

All maps should be kept clean and distinct and should be repaired when necessary. Maps which pupils will be allowed to touch should be covered with a coat of lacquer. With the new impetus to map-making as a result of the war, the maps of the future should be far superior to the ones now used in teaching.

Students who map a section of their own town or neighborhood learn valuable map lessons in the process.

"Air-age" maps represent the new approach to map-making developed in the course of the war that present a land-surface as seen from the air. Every flat map is "untrue", because it

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portrays on a flat surface an object that is rounded. It is a plane trying to be a sphere. No flat map should be used except in conjunction with a globe. With a Mercator projection, one should show the students how the flat map exaggerates as we near the poles.

Too many colors on a map confuse and block the learner. Some children may conclude that if a particular state appears in purple, the state itself looks purple, unless color in maps has been properly explained.

Scale markings are often hidden in a corner. Children should use a ruler and make some calculations.

It should be helpful to children to see various kinds of maps when studying a particular area. If a Mercator projection is the basal map, it should be supplemented with a globe and an air-age map. Several facts may be learned simultaneously, and they may not have the misconceptions many adults have about the earth's surface as represented by maps.

A graphic chart is a drawing which represents a fact, or an idea. Newspapers, magazines and other publications make extensive use of this illustrative method to convey statistical data. Every citizen should be able to interpret the meaning of the commonly used graphs.

For common school purposes four types of graphs are commonly used in textbooks; namely, the bar, the circle, the curve and the pictorial chart. Children may be taught how to make and use these effective graphs very early in the grades if they are held to the simplest constructions. Pupils may learn very concretely

the first time in the history of the world, the whole of the human race has been gathered together in one place, and that is the city of Rome.

Now, if you will look at the map of Italy, you will see that Rome is situated in the middle of the country, and that it is surrounded by mountains on all sides. This makes it a very difficult place to attack, and that is why the Romans were able to defend themselves so well against their enemies.

But, even though Rome was a strong city, it still had its share of difficulties. One of the biggest problems that the Romans faced was the fact that they had to pay for their army and their government. They did this by taxing the people who lived in their empire.

Another problem that the Romans faced was the fact that they had to defend their empire from outside invaders. They did this by building a large wall called the "Great Wall of China" which ran along the northern border of their empire.

Finally, the Romans also had to deal with internal problems such as political corruption and social inequality. These problems led to many revolts and uprisings throughout the empire, which eventually led to its downfall.

how bars may represent abstract ideas, such as sizes of continents, value of crops, or populations of countries.

Circle representations are adapted to convey general impressions, as children are not capable of estimating the size of angles and cannot divide circles accurately.

Elementary children may be taught to plot simple curve graphs to show their progress and achievement in their daily lessons. This has a wonderful psychological effect. Group charts are of value in stimulating interest for better work.

The most appealing graph is the picture graph. General impressions should be made on the minds of growing children. The beautiful colored pictures which appear in nearly every popular magazine furnish a wealth of appropriate pictorial material for almost every need in the classroom. Nothing can take the place of the handmade chart which the children may share in making.

The making of graphs offers a splendid opportunity for the pupil to apply his knowledge of printing and his feeling for harmony of color.

The blackboard is useful in planning and summarizing experiences - field trips, motion pictures, filmstrips and recordings. The blackboard brings into the teaching situation an element of activity. It may be used to list steps, sources and references, assignments or to illustrate or supplement other instructional materials. The board is almost indispensable for summarizing. It lends itself to participation by both teacher and pupil. The factor of action tends to make all concerned eager to see what comes next. The teacher should avoid talking

to the blackboard and let it be thought of as a means of communication.

Diffused lighting directly over the board is good, but both glare and shadows must be avoided. The board and chalk should be in sharp color contrast. Many boards now built into schools are a soft green on which white chalk is used. Others are yellow on which a newly developed black chalk is used. If the board is black, yellow chalk may be better than white.

There is a white enamel surface on which wax crayons are used. They are useful in dark areas where there must be no glare. Tempera may be used on boards as it is easily washed off. Shades may be pulled over them when not in use.

Plans in Elementary School Classrooms by N. L. Englehart¹ show boards which swing open like the pages of a book. Boards which slide upward are a help to the teacher, if she must write after the children enter the room.

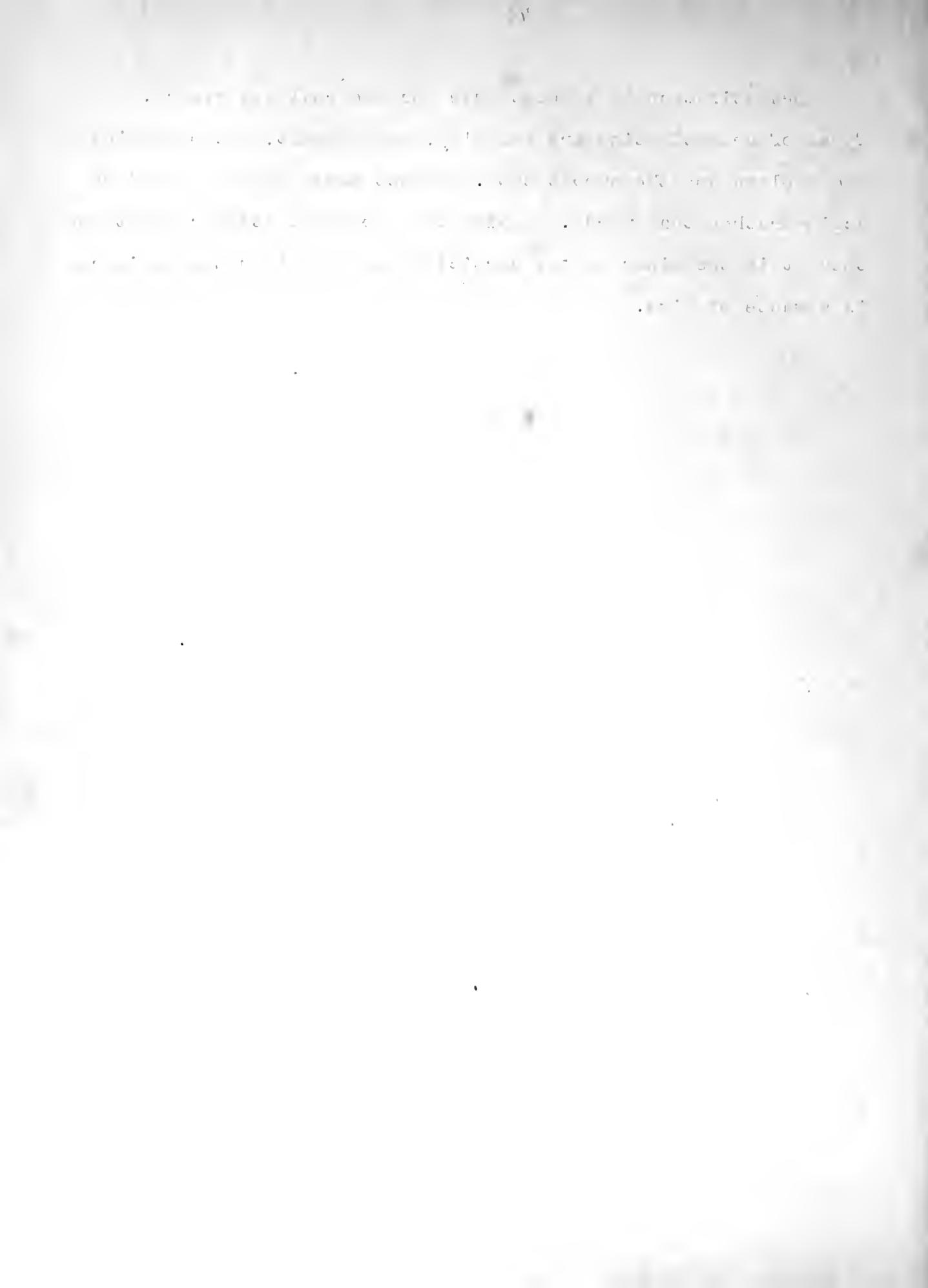
Blackboards and bulletin boards have certain relationships. To make the blackboard space more flexible, reversible panels - cork board on one side, chalk surface on the other - are available. Some of the uses of the bulletin board are the following: to display announcements, booklets, bulletins, cartoons, charts, clippings, data, drawings, maps, models, news items, posters, and specimens of pupils work.

Children should be made responsible for its care, arrangement and attractiveness. Interest will determine how long the items are to remain. Its relationship to the classroom procedure should be purposeful.

1. Louise Kable, "The Chalkboard", N.E.A. Journal (May, 1948).
p. 306

Dramatization is a substitute for the real experience.

Types of dramatization are the play, the pageant, the pantomime and tableau and the puppet show. Puppet shows must be based on action rather than words. A play that does not start currents of thought in the minds of the participants as well as the audience is a waste of time.



CHAPTER IX

RADIO AND RECORDINGS

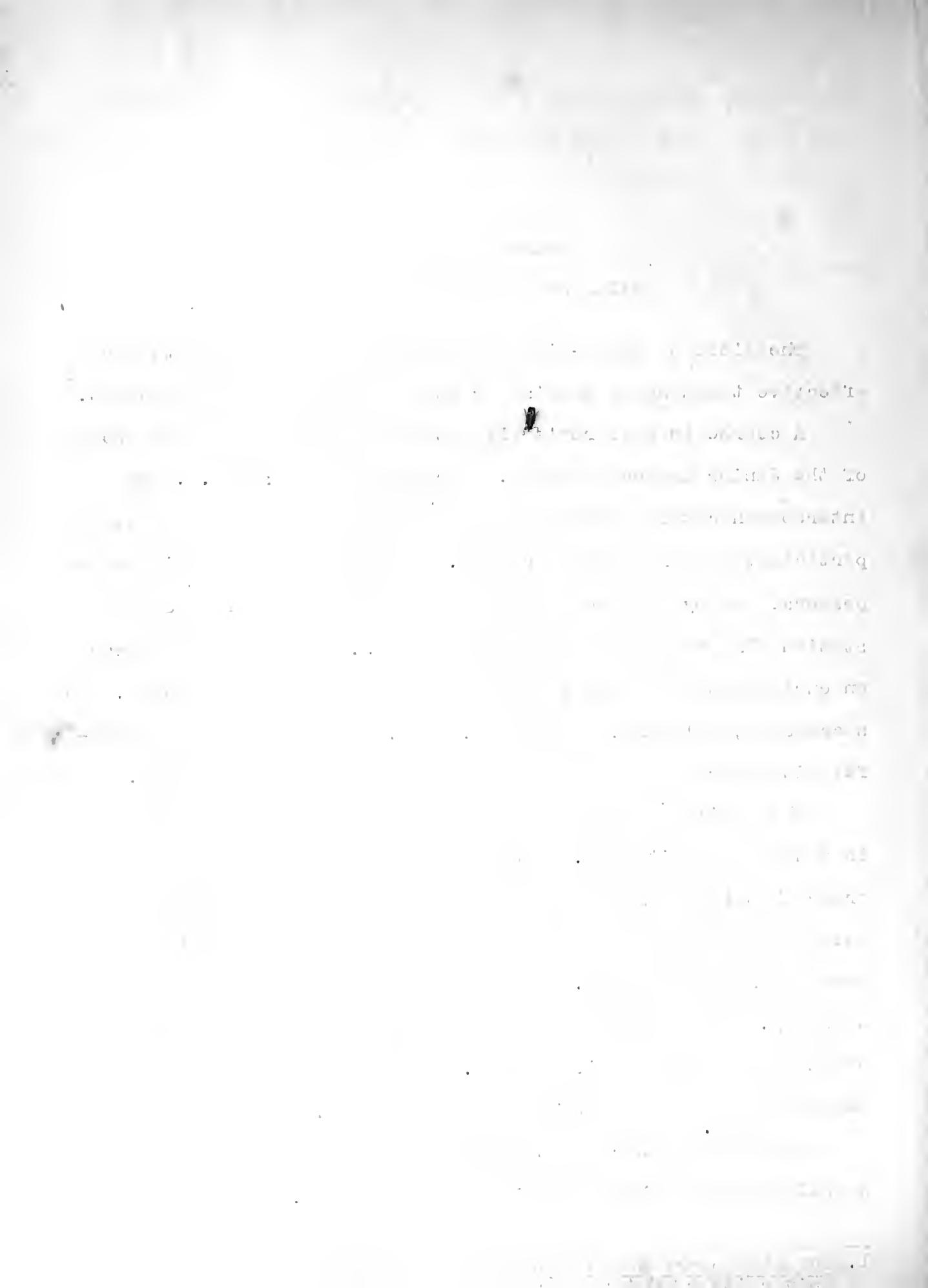
The field of audio-visual aids that can contribute to more effective teaching of English is still almost a primeval forest.¹

A course in children's literature was sponsored by the women of the Junior League of Tampa. Each Friday at 1:15 P.M. the intercommunication system made it possible for each class room to participate in this radio program. The program was publicized by posters, and by announcements on the bulletin board. The radio station WDAE sponsored these performances. Throughout the year an enrichment of language and literary experiences was noted. In succession, folklore, fairy tale, myth, legend and modern fanciful literature was presented by the radio script performers.

The pupil could hear the story delivered in good speech and in a tone of excitement. Certain preparations were made in order that the story could be better understood and enjoyed. The cast of characters was written upon the blackboard, followed by some descriptive phrase. Unfamiliar names were remembered better this way. The setting of the story was mentioned and located during the Social Studies period. A short synopsis of the story helped to make the events of the story clear.

Occasionally each member was asked to fill out a small questionnaire at the conclusion of the program. Usually, however,

1. The Elementary School Journal, The University of Chicago at the University of Chicago Press, Vol. XLVIII, No. 8, April, 1948.



the children enjoyed sketching some object or picture suggested by the radio play. In this way the audio-visual experience of the child could be united. A group project was carried out by duplicating the best sketches on a large world map drawn by the pupils. Geographical settings were emphasized by this pictorial method. It aided in associating certain stories with certain countries.

This new technique offers an opportunity for teachers to make their school a real part of community education.

The programs given since January were presented in the following manner:

Materials: a drawing showing some salient idea of the story, a resume of the book from which the broadcast is derived, a listing of the incidents in the transcription, a project for map work, a set of pre-broadcast questions, a set of after-broadcast questions, suggested follow-up projects, and a correlated reading list. For example:

A story of Florida "Crackers" around 1900 and the feud between the Boyers who want to keep their land fenced in and the Slaters who want open range to let their cattle roam.

Incidents in the Broadcast: 1) The Slaters, newcomers to the community come to call on the Boyers. 2) Birdie Boyer meets Shoestring Slater and the two discuss fences. 3) The Slaters' hogs get into the Boyers' garden. 4) Pa Boyer deals with the situation when the hogs get loose again. 5) Mr. Slater leaves a threatening note. 6) Birdie advises Shoestring to feed the hogs so they won't run loose in other people's gardens. 7) Boyer and Slater have further argument about the fences.

and the author's name. It is also possible to add a date and place of birth, and a list of publications. This is done by clicking on the "Edit" button in the top right corner of the page.

The "Edit" button will open a modal window where you can edit the page's content.

Once you have made your changes, click the "Save" button at the bottom of the modal window.

The changes will now be saved to the page, and the page will be updated with the new information.

If you want to add more information to the page, simply click the "Edit" button again and make your changes.

Once you have finished editing the page, click the "Save" button at the bottom of the modal window.

The changes will now be saved to the page, and the page will be updated with the new information.

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8) Ma Boyer and Birdie pretend to put poison on their plants to scare the Slaters' cattle away. 9) Peace between the two families is restored and all celebrate at a candy pulling party.

Cast:	Birdie Boyer	Shoestring Slater
	Ma Boyer	Mr. Slater
	Pa Boyer	Mrs. Slater

For Your Map: Locate the state of Florida.

Pre-Broadcast Activities:

1. Who were the first settlers to come to Florida?
2. Where did the settlers who populated Florida come from?
3. When did Florida become a State of the Union?
4. What is the climate of Florida?
5. What is a folk song? Can you sing any?

After-Broadcast Activities:

1. Why were the Florida cowmen called "Crackers"?
2. Why did the Boyers and Slaters have troubles over fences?
3. At what period does the action in the story take place?
4. Can you name another section of the country where the argument over fences disturbed the peace between the cattlemen and farmers? In what radio program are these stories told? (Lone Ranger)
5. What crops do we get from Florida today?
6. What do these words mean as used in the script? purely, shore, bed-kiver, iffen, nary, ruckus, reckon, hogses, tote?

Follow-Up Activities:

1. Learn the song "Coffee Grows on White-Oak Trees", and work out a simple dance to go with it.
2. Would you rather have lived in Florida in 1900 or in New York State today? Write a letter to the Junior League telling why.

Correlated Reading List:

Hurricane Treasure	Sackett
Spanjer's Jinx	Sackett
The Yearling	Rawlings

In this "Books Bring Adventure" series put on the air by the Junior League of Tampa, other books presented were:

and the top of the hill and the side of the hill (6
and all around) was covered with trees and bushes
and the ground was covered with the fallen leaves and
the grass.

There were many
trees and
bushes.

There were many trees and bushes.
The ground was covered with fallen leaves.

The ground was covered with fallen leaves.
There were many trees and bushes.
There were many trees and bushes.
There were many trees and bushes.
There were many trees and bushes.

There were many trees and bushes.

There were many trees and bushes.
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There were many trees and bushes.
There were many trees and bushes.

There were many trees and bushes.

There were many
trees and
bushes.

There were many trees and bushes.

There were many trees and bushes.

There were many trees and bushes.

There were many trees and bushes.

"Bayou Suzette"
"Forest Patrol"
"Road to Alaska"
"Downright Dencey"
"Robin on the Mountain"
"Young Mac Fort Van Couver"
"Copper-toed Boots"
"Homer Price"
"Adventure North"
"The Middle Button"
"Riders of the Gabilans"
"Spurs for Antonia"

This is the great age of fact. The release of atomic energy is simply the latest and most destructive fact. Our reason for this near-worship of facts is probably our respect for science, the feeling that the orderly accumulation of facts is the real source of knowledge and that is based on facts which can be seen, touched, or heard. If this were true, we should not be concerned with anything except the atom. But we should teach children about giants and elves, about ancient Persians, about magical men on flying carpets, and all kinds of stories in order to develop their imagination. Even advances in science came from energetic imagination.

All books are concerned with human nature. What was true of a Persian merchant named Sinbad thousands of years ago is still true of your neighbor next door who comes close to failing because of too much ambition. Children need to learn that admirable qualities will triumph over their opposites in the end. This kind of truth can be learned most painlessly through books. In this atomic age children will need a flexible mind and active imagination to endure whatever may come.

Latin children, as a rule, are highly imaginative. The special value of radio stories, as were mentioned previously, lay in the fact that it combined wisdom with pleasure. The children were profitably instructed and at the same time happily and wisely entertained.

In selecting radio programs for use in the classroom, teachers should consult the radio columns of the daily newspapers, and the classified schedules published by periodicals dealing with radio. By request schools can obtain broadcasting schedules from CBS, NBC and MBS broadcasting systems. From the programs available, only those of definite educational value should be selected. Among these are:

- (1) Series of broadcasts prepared especially for school use.
- (2) Special programs of music.
- (3) Current events broadcasts.
- (4) "At the Scene" broadcasts of events of historical, scientific, or other importance.
- (5) Programs in observance of special days or weeks.
- (6) Foreign broadcasts in language understood by pupils.

In using radio in the classroom, the following procedure should be used:

- I. Make advance preparation
 1. Secure manuals, leaflets and other helps that are prepared by program producers.
 2. Select good references pertaining to the broadcast, and guide pupils in using the material.
 3. Provide a radio set sufficiently large and perfect enough to give good reception.
 4. Set up specific aims for each broadcast such as information to be gained and attitudes to be developed.
- II. Create a listening atmosphere for the broadcast.
 1. Select a room free from objectionable noises.
 2. Secure the undivided attention of every pupil.
 3. Allow no interruptions.

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III. Provide a follow-up period.

1. Discuss the material presented.
2. Make local adaptions
3. Encourage pupil participation in summarizing
4. Check pupil learning and attitudes

IV. Evaluate the program and suggest future activities.

Recordings are sometimes used to supplement other materials about a foreign country, particularly through the use of folk songs and other music with a distinct national flavor.

• 100% of our customers are satisfied
with our products and services.
• 95% of our customers are satisfied
with our products and services.
• 90% of our customers are satisfied
with our products and services.
• 85% of our customers are satisfied
with our products and services.
• 80% of our customers are satisfied
with our products and services.
• 75% of our customers are satisfied
with our products and services.
• 70% of our customers are satisfied
with our products and services.
• 65% of our customers are satisfied
with our products and services.
• 60% of our customers are satisfied
with our products and services.
• 55% of our customers are satisfied
with our products and services.
• 50% of our customers are satisfied
with our products and services.
• 45% of our customers are satisfied
with our products and services.
• 40% of our customers are satisfied
with our products and services.
• 35% of our customers are satisfied
with our products and services.
• 30% of our customers are satisfied
with our products and services.
• 25% of our customers are satisfied
with our products and services.
• 20% of our customers are satisfied
with our products and services.
• 15% of our customers are satisfied
with our products and services.
• 10% of our customers are satisfied
with our products and services.
• 5% of our customers are satisfied
with our products and services.
• 1% of our customers are satisfied
with our products and services.

CHAPTER X

EVALUATING AUDIO-VISUAL MATERIALS

There must not be any mistaken idea that the use of audio-visual aids in the classroom will free the teacher from work. New educational tools require more skill and responsibility. The ones who really benefit are the students, as audio-visual aids enrich the curriculum and promote thoroughness in teaching.

Audio-visual aids may become actually confusing unless some of these practices governing their use are observed:

1. They must be selected and presented at the right time to the right group.
2. The teacher must evaluate them before and after using.
3. The teacher must prepare the class to receive them properly.
4. The teacher must follow them up with appropriate discussions, questions and tests.
5. The students must know what they are expected to learn from them and must be held accountable for it.
6. The teacher must use the aids as an integrated part of her lesson plan, and not as something extra in the classroom procedure.
7. There must be a clear distinction made in the use of entertainment films and instructional films.
8. Films should not be used to fill in time or to get relief from the classroom.
9. The teacher must know how to answer the sensible questions it raises in the minds of the students.

A P R I L 19

WEDNESDAY APRIL 19, 1967

To determine the relationship between the
chemical properties of a polymer and its biological
activity, we must first understand the mechanism of action
of the polymer. In addition, it is important to add
information about the physical and chemical properties
of the polymer.

1. THE MECHANISM OF ACTION OF POLYMERS

It is generally accepted that polymers have two modes
of action: (1) direct interaction with the target cell, and (2)
indirect interaction via a carrier molecule.

The direct interaction mode is characterized by a rapid
onset of action and a short duration of effect.

The indirect interaction mode is characterized by a slow
onset of action and a long duration of effect.

The direct interaction mode is characterized by a rapid
onset of action and a short duration of effect.

The indirect interaction mode is characterized by a slow
onset of action and a long duration of effect.

The direct interaction mode is characterized by a rapid
onset of action and a short duration of effect.

The indirect interaction mode is characterized by a slow
onset of action and a long duration of effect.

The direct interaction mode is characterized by a rapid
onset of action and a short duration of effect.

The indirect interaction mode is characterized by a slow
onset of action and a long duration of effect.

10. The projection equipment must be kept in good condition to operate smoothly.
11. Projection rooms must be properly ventilated and yet sufficiently darkened at the same time.
12. The teacher must know how to draw attention to the points that really count.
13. The teacher has to know how to eliminate distractions.
14. Films should be regarded as something more than just instructional devices. It is easy for both teacher and pupils to fool themselves into believing that something worthwhile is being done when actually the time is being wasted.

It must be remembered that other interests and agencies recognize the value of audio-visual aids as well as the school. It is necessary that public education must teach desirable attitudes in our constantly changing society, in order to maintain a healthy balance.

The results obtained from the film showings were quite satisfactory to the teacher of this fifth grade class. Other points also observed were:

1. The results varied with the circumstances under which the film was shown - the type of film shown, and the type of child.
2. The films stimulated the imagination.
3. Previous knowledge was connected and clarified.
4. Incidental details were portrayed not found in textbooks.
5. It aided retention.
6. The films encouraged the children to express opinions and describe scenes.
7. The films gave pleasure and caused the subject matter to be more meaningful.

8. The films offered an experience for children who have no opportunities for travel.
9. The value of the film was increased by follow-up discussions.
10. Using the films did not make the pupils mentally lazy.

It was found necessary for the teacher to become familiar with the film to be shown. In the preview the various types of audio-visual learning cues were noted. The teacher's manual accompanying the film is helpful in the preparation of the use of the film.

Sometimes it was necessary to explain new words appearing in the film. Attention should be drawn to certain scenes which will be shown in the picture. Advance assignments of activities growing out of the film experience may be made. The purpose for studying the film should be outlined clearly in the minds of the students before the showing.

An uninterrupted showing was found to be most desirable in the first showing. If shown again, the teacher found it to be of benefit to stop the projector for brief comments, or the sound might be shut off and the teachers own commentary offered. The same procedure may be used in a review, with the pupil describing or commenting upon the picture.

If it was a good film, the pupil wanted to do something about what he observed - either to exchange viewpoints, verify, or learn more about the new ideas which the picture had given him. These discussions gave the teacher an opportunity to discover the interests of the pupil, and give guidance along these lines.

12. *Alouatta seniculus* B. Bonplandensis et
var. *seniculus* (Linn.) Cuvier observed one

in a park near Paris, April 20, 1842. A
monkey of the same species was seen in
the same place in 1841.

13. *Alouatta seniculus* B. Bonplandensis et
var. *seniculus* (Linn.) Cuvier observed one

in a park near Paris, April 20, 1842. A monkey
of the same species was seen in the same place in
April 1841. The monkey was black, with a white
ring around the eye, and a white patch on the
cheek. The tail was long and bushy. The monkey
was seen in a park near Paris, April 20, 1842. A
monkey of the same species was seen in the same place in
April 1841. The monkey was black, with a white
ring around the eye, and a white patch on the
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14. *Alouatta seniculus* B. Bonplandensis et
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15. *Alouatta seniculus* B. Bonplandensis et
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16. *Alouatta seniculus* B. Bonplandensis et
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April 1841. The monkey was black, with a white
ring around the eye, and a white patch on the
cheek. The tail was long and bushy.

17. *Alouatta seniculus* B. Bonplandensis et
var. *seniculus* (Linn.) Cuvier observed one
in a park near Paris, April 20, 1842. A monkey
of the same species was seen in the same place in
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ring around the eye, and a white patch on the
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18. *Alouatta seniculus* B. Bonplandensis et
var. *seniculus* (Linn.) Cuvier observed one
in a park near Paris, April 20, 1842. A monkey
of the same species was seen in the same place in
April 1841. The monkey was black, with a white
ring around the eye, and a white patch on the
cheek. The tail was long and bushy.

The general discussion which followed helped to give the teacher ideas for following activities. Questions and interests lead naturally into various projects.

If time permitted, it was found of advantage to show a sound film several times. The second showing will answer questions which have been raised and add more to the understanding of the subject. A final showing, toward the end of a unit, is a good idea for review and making a summary.

In making the best use of sound pictures, it is necessary to become familiar with the various books on the subject, as well as articles appearing in school journals written during the past two or three years. Demonstrations of good methods of film use at professional meetings proved helpful.

The impression of the writer at first was that the film was a valuable experience just in itself. It took time and a few experiences to discover that if educational methods were applied to educational films, better results were produced than when the film was simply exhibited at school as in the movie theater.

It was found if two films were shown at one session the learning was less in the second film. This may be largely due to the fact that the ventilation was poor in the visual education room. It was necessary to pull down all the shades to darken the room, which also excluded the air.

The writer had hoped that the slow learner might learn more in proportion, in order to bring him up to the average level of the class, but it was found that slower learners learned much less from the film than do faster learners.

If the film was not previewed by the teacher, with a few

notes jotted down, it was not so easy to find what else must be learned to obtain a good understanding of the subject shown in the film.

The introductory remarks of the teacher have a great deal of influence on how much the class will learn from the film.

Note-taking in a darkened room is almost impossible for children to do. Some of the children wished to, but it was found best to leave the pencils in the home room.

Films may be simply enjoyed or analyzed as in reading a book. As an aid to teaching it should be followed by discussion, experiment, additional reading, or some form of expressive activity.

Since fifteen teachers shared in the use of the visual aid room and equipment, and since various school activities took up a great deal of the school day, as music, library, physical education, student government activities, school orchestra, et cetera, it was sometimes difficult to plan to see more than two or three films per week. It was found to be best to show the film at the regular Social Studies period, if possible. It takes cooperation and planning, not only on the part of both teacher and pupils, but among all the teachers of the building to make the visual aid program a success.

Another result of this experiment with a class in the field of visual education is that the writer became more aware of the possibilities in this field, and the need for more training along this line.

The reading from various sources named in the Bibliography served to enlighten the writer of the meaning of the term

"Audio-Visual Education", and the results achieved by others in both military and civilian life, as well as in the classroom. With this beginning for a foundation, the introduction of visual education was made in the Social Studies field of this fifth grade class. The films were shown on an average of three times a week. The experiment was limited in that the class could not be divided and information obtained on two groups - one that saw the film and the one that did not. The teacher was responsible for all of the class at all times during the school day. The results in general have been written as noted by the teacher and indicated in the responses of the pupils.

The majority of the class disliked Social Studies at the beginning of the study, but finished with a general liking for ¹ it. The films made their textbook learning more real and vital to them and their own needs.

From the pupils viewpoint, the following poem (taken from a film magazine) might illustrate their idea of results from film showings:

"The Overhead Projector"

Two weeks ago in our school, in came a new machine,
It was an odd apparatus, quite the queerest we'd ever
seen.

We wondered what it was, with mirrors, lens and light.
We tried to sit calmly and wait and keep still with
all our might.

It's just a new projector, a very handy thing,
It doesn't wobble back and forth, neither does it
swing.

A technicolor map can be flashed upon our wall,
'Tis so much fun to draw it, not like work at all.

1. See Appendix "B"

It makes our reading easier - we use it in history. Things really do seem true now that were once a mystery.

Health is made much better when we see it through a film.

Even Jack says Spelling is easier; it was so hard for him.

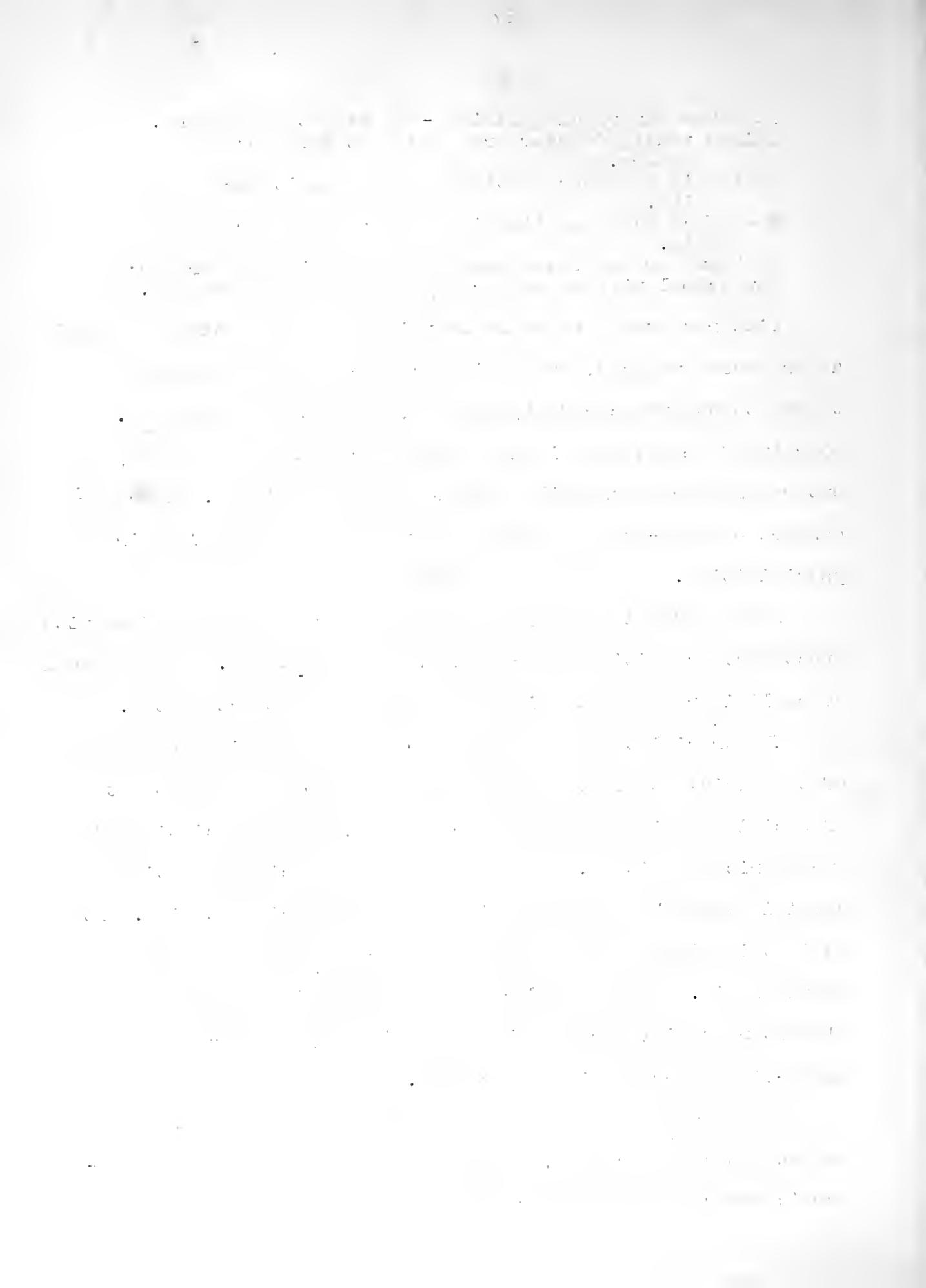
We know how our teeth look and the inside of our ear; Now school will be better the remainder of the year.

Pictures supply valuable learnings in social studies as well as in other subjects, but it is necessary that children be taught to observe carefully and to interpret what they see. Learning from pictures is not usually acquired incidentally but results from carefully planned study activities. There are dangers of over-use of pictures as well as neglect of their possibilities.

In the school journey the individual comes face to face with processes, activities and realities in life itself. There should be preliminary understanding of purpose and subject matter.

The crucial times in which we live make particular demands of the social studies, which have to do with the development of social and civic attitudes and skills, and appreciation of our American heritage. The foundations of social education are laid through instruction in elementary social studies. It is in this field that an effort to improve social education should begin. Such an effort to streamline instruction in elementary social studies should be aided by a well-planned audio-visual program in the schools.

We are at the beginning of a new era in education, for who can deny that the camera, projection equipment and the stereoscopic devices of the future are not as revolutionary as the



discovery of printing? They are the next great advance in our way of communicating ideas and information from man to man. Visual education has shortened the distance between the child and the matter he studies. The old methods and the old curricula can not compete with the benefits of visual education. Everything depends, however, upon how we go about using it. There must be close cooperation between the people who make the visual tools and the people who use them; there must be constant experimentation and constant research. Audio-visual education has vital possibilities, and through it all, the most important figure will always be what it always has been in education: the teacher.

Teachers who realize the limitations of teaching that is entirely verbal try to use a variety of instructional materials. Words are not neglected, but the boys and girls also study pictures and exhibits, work in a shop or laboratory, take school journeys, look at models, listen to radio programs and transcriptions, study slides and motion pictures.

This use of a variety of curriculum materials may complicate the teacher's work. The dividends in improved learning and interest, however, are large. Teaching that is routinized and altogether verbal often results in very little learning.

After the children have reacted to whatever instructional materials the teacher suggests, something must be done to be reasonably certain that generalizations are reached and concepts developed.

Finally, the teacher attempts to find out whether or not the boys and girls have learned what it was they should have learned. This means testing or evaluation.

B I B L I O G R A P H Y

- A. Books
- B. Periodicals
- C. Bulletins

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the first time I have seen such a large number of
T. virgatulus and dieffenbachia in one place.

There were many species of orchids, including
Cattleya, Epidendrum, Encyclia, Laelia, Phragmipedium,

and many others. There were also some bromeliads.
See Fig. 8, 9.

Botanical notes

There were many species of bromeliads, including
Aechmea, Neoregelia, Tillandsia, Vriesea, etc.

There were many species of orchids, including
Cattleya, Epidendrum, Encyclia, Laelia, Phragmipedium,

and many others. There were also some bromeliads.
See Fig. 8, 9.

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Cattleya, Epidendrum, Encyclia, Laelia, Phragmipedium,

and many others. There were also some bromeliads.
See Fig. 8, 9.

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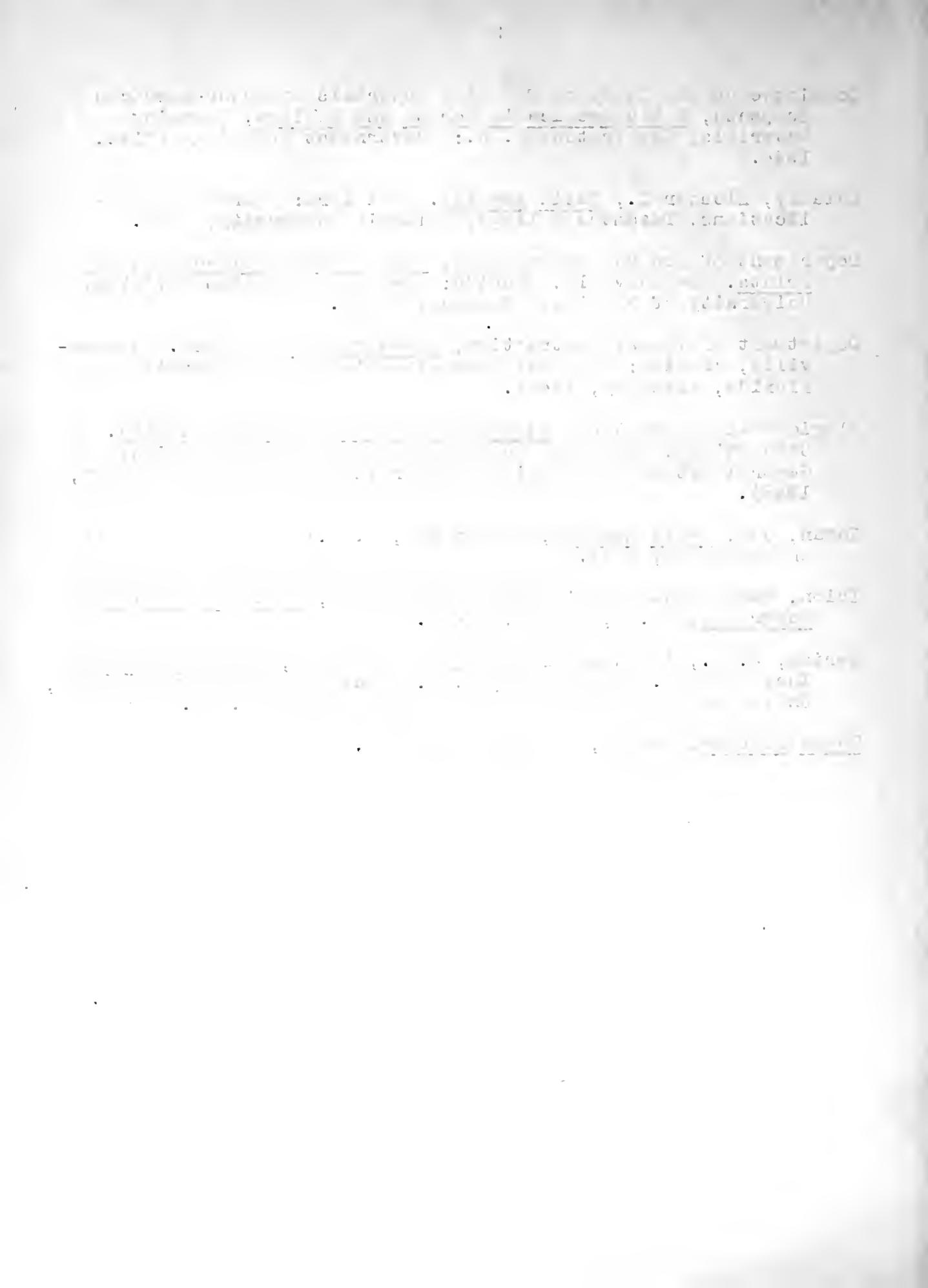
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A P P E N D I X

APPENDIX "A"

Pupil Evaluations

At the conclusion of this study the teacher gave the pupils their choice of the titles "Why I Like Social Studies" or "Why I Don't Like Social Studies", and asked them to write a paragraph expressing their viewpoint. She told them they need not sign their name to it unless they wished to do so. Most of them did. In the group of thirty pupils, twenty-five chose "Why I Like Social Studies", four chose "Why I Don't Like Social Studies" and one wrote on both sides of the question as follows:

"I like Social Studies because I like to read about other parts of the world, and I like to read about the early explorers like Cortez, De Soto and Columbus. I don't like it because I don't like to write the answers to the questions and I don't like to write stories about what I read." (Bobbie)

"It doesn't include enough people of today and it hasn't got any chemastray or Science in it. This is 1948 and not 1613. I like Science bettern eny day than Geography. History is good but doesn't incloud pepole of today. That is what I think of Geography." (Thomas)

"One reason I don't like Social Studies because we go so slow and it gets so boring, and the questions in the back of each part we study - there are too many of them." (Hannah)

"The reason I like Social Studies is because I can't always go to these places. But in Social Studies I can see them in my mind. Lots of boys and girls think Social Studies is hard. But if we didn't have it we might never know what placed look like. By pictures we can see the colors of mountains, great water falls, large cities, and rolling plains. In our minds we can see how people in different countries look like, and dress." (Carol)

"I like Social Studies because I think it is interesting to listen to things that the teacher and the children have had. I like it when the teacher gives us reports to make about some things we have studied about. I like to draw maps and learn how to spell the states and capitals, even though I do get mixed up and that is why I like Social Studies." (Miriam)

the first time in the history of the world
that the people of the United States have
been compelled to go to war with their
neighbors, and that they have done so
in the cause of justice and freedom.

The American people are deeply
concerned about the safety of their
countrymen in Mexico, and they are
anxious to see that justice is done.
They are also anxious to see that
the Mexican government will
not interfere with the American
people in their efforts to
protect their countrymen.

The American people are deeply
concerned about the safety of their
countrymen in Mexico, and they are
anxious to see that justice is done.
They are also anxious to see that
the Mexican government will
not interfere with the American
people in their efforts to
protect their countrymen.

"I like Social Studies even if I do get D and F in it. I like it because it shows you everything about other countries around you." (Mary)

"I like Social Studies because you see films and learn things about other parts of the country. The films you see may be about rainfall map or a farm map. When you read a Social Studies book you read about dams - Alaska and many other things." (Bobby)

"I like Social Studies because it teaches me a lot of things I did not know. There is only one thing I do not like in Social Studies, that is the questions. Social Studies gives me ideas of where I want to go when I get big. The films that I see also teach me a lot of things." (Robert)

"I like Social Studies very much. It is very interesting to see in your "imansun" so many places. I enjoy it even more since we started having pictures." (Mary)

"I like Social Studies because I learn about the early settlers and the Indians, heroes and mother nature's great wonders. Also what crops that are raised and what raw minerals are found in the earth. And what rivers and lakes are used for transportation. I like Social Studies because I would like to travel around the earth when I grow up. And Social Studies helps me to see where I would like to go." (Jean)

"I like Social Studies because it tells me about the world. Without my Social Studies I would not know about great men and countries around me. In our class we have films to make what we are studing about plainer. And I understand it better. I also like Social Studies because it like about different countries and different people. We also have charts and maps to help us." (Frances)

"I like Social Studies because we saw film about the county we study and we draw maps of the county we study about and we read book and we here radio program about the countyes and we saw pictures and we saw stereographs and I would like to go to all the county we study about." (Anna)

"I like Social Studies because I learn about people in another country. The film help people plenty in their Social Studies. When I grow up if I go to any one of these places I no a little about it." (Bobby)

"I think Social Studies is a very interesting subject. Social Studies can tell you about different countrys, their ways and their doings. Social Studies sometimes tells you the hard ways in other peoples life. That makes us fell happy that we live in a free country. Films help us in Social Studies to really pretend we are in these countries. That is why I like Social Studies." (Claudia)

the first time, the α_1 and α_2 of the $\alpha_1\alpha_2$ model (see (5.1)) are obtained.

The second part of the proof is to show that the $\alpha_1\alpha_2$ model is a good approximation to the $\alpha_1\alpha_2\alpha_3$ model. This is done by showing that the difference between the $\alpha_1\alpha_2$ and $\alpha_1\alpha_2\alpha_3$ models is small enough so that the error in the $\alpha_1\alpha_2$ model is negligible.

Let $\alpha_1 = \alpha_1(\alpha_2)$ be the solution to the $\alpha_1\alpha_2$ model. Then we have

$$\alpha_1 = \frac{\alpha_2}{1 + \alpha_2} \quad (5.2)$$

Let $\alpha_1^* = \alpha_1^*(\alpha_2)$ be the solution to the $\alpha_1\alpha_2\alpha_3$ model. Then we have

$$\alpha_1^* = \frac{\alpha_2}{1 + \alpha_2 + \alpha_3} \quad (5.3)$$

Let $\alpha_2 = \alpha_2(\alpha_3)$ be the solution to the $\alpha_1\alpha_2\alpha_3$ model. Then we have

$$\alpha_2 = \frac{\alpha_3}{1 + \alpha_3} \quad (5.4)$$

Let $\alpha_1 = \alpha_1(\alpha_3)$ be the solution to the $\alpha_1\alpha_2\alpha_3$ model. Then we have

"I like Social Studies because this subject is very interesting. It tells about different countries, cities, and towns. It tells the products each place raises, and also many other facts. It also tells about the early settlers, and how they made their living. We saw many films about the places we read about. The films also help you to know more about how a place looks. We would not know as much as we do without Social Studies."
(Barbara)

the first time in the history of the world, the people of the United States have been compelled to make a choice between two political parties, each of which has a distinct and well-defined platform, and each of which has a definite and well-defined object in view. The people of the United States have been compelled to make a choice between two political parties, each of which has a distinct and well-defined platform, and each of which has a definite and well-defined object in view.

APPENDIX "B"

LESSON PLANS

Fifth Grade

Six Weeks

May 3 - June 11, 1948

LEE SCHOOL - Grace White

"OUR NORTHERN AND SOUTHERN NEIGHBORS"

South America

Central America - (Review)

Mexico - (Review)

Alaska

Canada - (Review)

APPENDIX "B"

Visual Aids to be used or reviewed in this unit. (Those with * have been seen. Those underlined to be shown on dates as previously ordered.)

- * 1. Mexico
- 2. Argentina
- * 3. Northeastern States
- * 4. Eskimo Children
- * 5. Navajo Indians
- * 6. Colonial Expansion
- * 7. Mexican Children
- * 8. Middle States
- 9. Alaska
- *10. Early Settlers in New England
- *11. Sugar Cane
- 12. West Indies
- *13. Southeastern States
- *14. Colonial Children
- 15. Chile
- 16. Hawaii
- *17. Southwestern States
- *18. French Canadian Children
- *19. America High Spots
- *20. Flat Boat Men
- 21. Brazil
- *22. Northwestern States
- *23. New England Fishermen
- 24. Venezuela
- *25. Westward Movement
- *26. Wheat Farmer
- *27. The Heart of the Inca Empire
- *28. Mexico City
- *29. Argentina Primer
- *30. America the Beautiful
- *31. Cattlemen
- *32. "Railroadin'"
- *33. Ride 'Em Cowboy
- 34. Alaska's Silver Millions
- *35. Across the Border

CONCEPTS

1. Nature has laid many highways that men usually follow in traveling from place to place.
2. People are constantly striving to make living easier and happier.
3. People live differently, do different kinds of work, and have different needs in different parts of our country.
4. Many of our present ways of living may be improved in the future.
5. People are constantly becoming more dependent upon each other for the necessities of life.
6. Industry tends to center population in cities and in certain regions.
7. Within certain limits set up by the natural environment, there are different ways in which every region can be used.
8. Each region of our own country and of other countries has a rich history and many social forms which have grown up out of the past. (Folklore)
9. Through democracy, men obtain some social rights as the right to speak, to work, to play, and to help make the rules under which they live.
10. Social changes are slow, but civilization gradually makes progress.

OBJECTIVES

1. To understand how the geography and climatic conditions have affected the history and development of these countries.
2. To discover why the natural resources of many of these countries have not been developed to a greater extent and the possibilities of the future.
3. To gain an understanding of life in our neighboring countries and compare different types.
4. To realize that other countries and regions have heroes and leaders as we do.
5. To prepare a background for intelligent understanding of these countries now, and in the future.
6. To understand and appreciate the social customs and the cultural, as well as the economic life of these countries.

EXPECTED OUTCOMES

1. A love of country, deepened by becoming familiar with some of the major events in history, with its geography and with its people.
2. Tolerance, based on better understanding of ways of living different from our own.
3. Knowledge of the physical features, and the ability to describe other regions which have been studied. (Mexico)
4. An understanding of the similar problems man has and the way that geography influences our way of solving these problems.

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— 1 —

5. A general knowledge of the history of our region, and also some knowledge of the history of each region studied.
6. A better knowledge of the struggle mankind has undergone in attaining a democratic way of life.

GENERAL OUTLINE OF WORK

First three weeks:

1. South America
2. Central America (Review)
3. Mexico (Review)

Fourth Week:

1. Alaska
2. Canada (Review)

Fifth and Sixth Week:

1. Comparison and contrast
2. Picking up loose ends
3. Culminating activity
4. Test

THE APPROACH AND STIMULATION OF INTEREST

1. Pictures on bulletin board
2. Books on library table
3. Magazines and illustrative material
4. Maps to be used in discussion
5. Stories to be read to class
6. Postcards (Slides)
7. Films

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ACTIVITIES AND MATERIAL TO BE COVERED

1. Location and physical features of the country.
2. Comparison of climates
3. Natural resources
4. Industries, occupations, products and exports
5. Most important cities, in the countries and what they are noted for.
6. Historical material:
 - a. How countries gained independence
 - b. Leaders
 - c. National heroes
7. Contributions to the world:
 - a. Cultural
 - b. Scientific
 - c. Economic
8. Social customs

MATERIALS - TEXTS

Meyer, J. G. and Hamer, O. S., The New World and Its Growth, (Basal text), Follett, Chicago, 1947:

1. South America - pp. 507-564
2. Mexico - pp. 473-492
3. Central America - pp. 493-496
4. Canada - pp. 455-472
5. Alaska - pp. 431-442

Other Texts:

1. Meyer, Gray, Hancock, "Our Southern Neighbors", Follett, Chicago, 1942.
2. Atwood and Thomas, The American Nations, Ginn and Company, New York, 1943.
 - a. Alaska - pp. 228-235
 - b. Canada - pp. 248-263
 - c. Mexico - pp. 271-277
 - d. Central America - pp. 282-292

LIBRARY BOOKS

1. Adams, B. D., Sky High in Bolivia
2. Brown, Rose, Amazon Adventures of Two Children
3. Brown, Rose, Two Children of Brazil
4. Burglow, Nora, Around the Caribbean
5. Desmond, Mrs. A. J., Boys of the Andes
6. Edwards, M. B., Uncle Ben in Panama
7. Garrett, Helen, Angelo, The Naughty One
8. Gill, Delia, Letters from Guatemala
9. Holton, Priscilla, Uncle Ben in Mexico
10. Lee, M. H., Children of Banana Land
11. Lee, M. H., Pablo and Petro
12. Malkus, A. S., Along the Inca Highway
13. Morrow, Elizabeth, The Painted Pig
14. Pollock, H. G., Gaucha's Daughter
15. Storm, Dan, Picture Tales from Mexico
16. Von Hagen, V. M., Riches of South America

1952-1953

1. *Polypodium vulgare* L. (L.)

2. *Asplenium nidus* L.

3. *Asplenium nidus* L.

4. *Asplenium nidus* L.

5. *Asplenium nidus* L.

6. *Asplenium nidus* L.

7. *Asplenium nidus* L.

8. *Asplenium nidus* L.

9. *Asplenium nidus* L.

10. *Asplenium nidus* L.

11. *Asplenium nidus* L.

12. *Asplenium nidus* L.

13. *Asplenium nidus* L.

14. *Asplenium nidus* L.

15. *Asplenium nidus* L.

16. *Asplenium nidus* L.

17. *Asplenium nidus* L.

18. *Asplenium nidus* L.

17. Waldeck, Mrs. J. M., Exploring the Jungle
18. Gill, R. C., Kalin, The Dama
19. Haskell, Jean, Mexico
20. Russell, Mary, Si, Si, Rosita
21. Stork, Sutherland, A Boy and His Pig

Weekly readers.

Slides.

Maps, pictures and magazines.

CORRELATIONS

I. Stories to be read to class:

1. Angelo, the Naughty One
2. Pedro, of the Andes
3. How the Colonies Won their Independence

II. Oral English:

1. Reports on assigned topics
2. Book reports
3. Folk tales

III. Written English:

1. Friendly letter to a boy or girl in South America, Mexico, et cetera.
2. Business letter, ordering pamphlets from various addresses to be used in class.
3. Story about life in one of these countries.
4. Write poems.
5. Written exercises to increase skill in writing
(Notebooks)

100% of the time, the system is able to correctly identify the target object.

Table 10.5 shows the results for the first two experiments.

Table 10.6 shows the results for the third experiment.

Table 10.7 shows the results for the fourth experiment.

Table 10.8 shows the results for the fifth experiment.

Figure 10.6 shows the results for the sixth experiment.

Table 10.9

Table 10.10 shows the results for the seventh experiment.

Conclusion

The results of the experiments show that the proposed system is able to correctly identify the target object in most cases.

The system is able to correctly identify the target object in about 90% of the time.

The system is able to correctly identify the target object in about 95% of the time.

The system is able to correctly identify the target object in about 98% of the time.

The system is able to correctly identify the target object in about 99% of the time.

The system is able to correctly identify the target object in about 99.5% of the time.

The system is able to correctly identify the target object in about 99.8% of the time.

The system is able to correctly identify the target object in about 99.9% of the time.

The system is able to correctly identify the target object in about 99.95% of the time.

The system is able to correctly identify the target object in about 99.98% of the time.

The system is able to correctly identify the target object in about 99.99% of the time.

The system is able to correctly identify the target object in about 99.995% of the time.

The system is able to correctly identify the target object in about 99.998% of the time.

The system is able to correctly identify the target object in about 99.999% of the time.

The system is able to correctly identify the target object in about 99.9995% of the time.

The system is able to correctly identify the target object in about 99.9998% of the time.

The system is able to correctly identify the target object in about 99.9999% of the time.

6. Written articles for the school newspaper.

7. Stories of our own legendary heroes.

IV. Music (chosen by music teacher)

Supplemented by folk songs of our own country.

V. Art.

1. Mural for room.

2. Paper plates, with Mexican or South American designs.

VI. Spelling.

1. Last six weeks of basal text.

2. Special lists of words encountered in this unit to be put on the board for study.

VII. Health and Safety.

1. Tropical diseases.

2. Effect of climate upon the health of people.

3. Travel - different modes of safety.

VIII. Science.

1. Conservation - basal text.

2. Physical features of South America.

a. Make relief map.

IX. Arithmetic.

1. Written problems involving railroad mileage and population.

2. Graphs.

3. Drill in:

a. Long division

b. Addition and subtraction of simple fractions and mixed numbers.

c. Addition and subtraction of simple decimals

d. Review of fundamental processes.

X. Reading:

Group C - 3rd grade level

Assigned easy books and related materials.

Group B - 4th grade level

Text - "Today and Tomorrow"

Read - Northwestern Neighbors and We Go By Air

Group B -(Additional Reading)

1. Units of Material from Library

2. Weekly Readers

Group A - 5th grade level

Complete text - "Engine Whistles"

Weekly Readers

Reference books from Library on assigned topics

Some abilities to be mastered in Reading are to:

1. Reproduce thought and divide into units of thought
2. Find central theme
3. Understand written directions
4. Read with proper speed
5. Handle books with care
6. Be able to make an outline
7. Use Table of Contents and Index of a book

A permanent interest in reading should be a main objective as well as specific reading habits and skills.

XI. Physical Education:

1. Directed play
2. Small group play
3. Large group play

• *Leucosia* *luteola* (Fabricius) sp.

♂ 1900 m. 10.10.

Length 1.5 mm. - 2.2 mm.

Color brownish-yellow, becoming yellowish

below; dorsal side + $\frac{1}{2}$ ventral

yellowish brown, dorsal + ventral

4. Team Games
5. Rhythm activities
6. Classroom games

Some outcomes should be:

- a. To participate actively in the regular physical education activity in school and with friends on other occasions.
- b. Play according to the rules of fair play
- c. Give careful response to signals
- d. Politely wait and take turns
- e. Win and lose in a gracious manner
- f. Show thoughtful consideration for playmates by avoiding rough and loud behavior
- g. Courtesy and respect for leaders
- h. Interest in good posture
- i. Patience in playing with pupils of less skill
- j. To learn that one enjoys most the games he plays best

Games:

Volley ball	Basketball
Crows and Cranes	Baseball
Brass Wagon	Red River Valley
Right Hands Over	Virginia Reel

XII. Writing:

Emphasize -

1. Correct position
2. Muscular movement
3. Correct speed

4. Form

5. Application

These points should be considered:

1. Materials
2. Position at desk
3. Position of paper
4. Blackboard work
5. Drills to develop movement
 - a. Oval drills
 - b. Push and pull drills
 - c. Figures

CULMINATION OF ACTIVITIES

1. Quiz program carried on by students
2. Stories in English class
3. Test
4. Murals in room
5. Display of plates designed and made
6. Assembly program on "Folklore and Legendary Heroes"
 - a. Songs
 - b. Dances
 - c. Musical selections
 - d. Stories
 - e. Impersonations

EVALUATION

It is hoped that incidental learning will be going on among the group (by products such as better attitudes, word habits,

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CONTINUATION

OF THE STUDY OF THE INFLUENCE OF

CLIMATE ON

THE HABITAT AND DIET OF THE

BROWN SPARROW (PRUNella *bulgarica*)

IN THE MOUNTAINS OF SOUTHERN U.S.S.R.

BY V. A. KERSEVANOV AND N. V. TIKHONOV

TRANSLATED FROM RUSSIAN BY R. E. DAWSON

WITH A FOREWORD BY J. R. GALT

REVIEWED BY R. E. DAWSON

WITH A FOREWORD BY J. R. GALT

REVIEWED BY R. E. DAWSON

WITH A FOREWORD BY J. R. GALT

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WITH A FOREWORD BY J. R. GALT

REVIEWED BY R. E. DAWSON

uses of time, relationships, et cetera.)

Tests will be given frequently enough to know what the pupils are actually getting out of the study.

Progress and results are to be checked with the previously determined plans and the course of study.

Adequate drill in the drill subjects to be provided for those who especially need it.

Home work shall be occasional drill work for all, unfinished tasks for slow learners needing more time, and special assigned tasks to suit the individual interests and needs of the children.

APPENDIX "C"

Supplementary Materials

In showing the film "Life in Old Louisiana", the following plan was observed:

In our study of Louisiana, the text was consulted, maps of the region were studied, and some outside reading was done by various members of the class. A written test of six questions was given on February 18th:

1. What is a packet boat?
2. Describe a plantation home.
3. What is a duel?
4. What is a slave?
5. What is a Creole?
6. Name two crops raised around New Orleans.

Twenty-eight members of the class were present. Out of a possible 168 correct answers, only forty-nine were correct, or 23 per cent.

The following day the film "Life in Old Louisiana" was shown to the class. No discussion was made afterwards. When the pupils returned to their home room, the same questions were repeated in a written lesson with this result: Out of the possible 168 correct answers to the six questions that could be made by the same 28 pupils, 135 correct answers were counted after the papers were checked, or eighty per cent. This was a gain of 57 per cent over the day previous.

This increased knowledge can be shown by comparing the two papers on two consecutive days, one before and one after the film showing, as follows:

An offshoot of the Cistercian Order of Chiaravalle

(Continued from page 21)

and with the other two of the XII

Order of Cluny, namely, the *Abbaye de la Trinité de Cîteaux*, the

monastery of which was founded in 1088, and the

monastery of *St. Michel de Cuxa*

which was founded in 1089.

The *Abbaye de la Trinité de Cîteaux* was founded bythe monk *Hugues de Cluny* in 910,and the *Abbaye de Cuxa* bythe monk *Guilhem de Cuxa* in 880.The *Abbaye de Cuxa* was

founded in 880.

The *Abbaye de la Trinité de Cîteaux* was

founded in 910.

The *Abbaye de la Trinité de Cîteaux* was

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founded in 910.

Rose Hanell Life in Old Louisiana Feb. 18, 1948

- "1. A packet boat is a boat were they pack things.
- 2. - - -
- 3. - - -
- 4. A slave market is were they sell slave.
- 5. - - -
- 6. - - -

Rose Life in Old Louisiana Feb. 19, 1948

- "1. A packet boat is a steam boat.
- 2. A plantation home is a place like where they are coming from a trip they wash the floor and clean things up.
- 3. A duel is people that have a sord fight.
- 4. A slave market is a place were they sell slaves.
- 5. A Creole is people, French people.
- 6. Sugar cane. Cotton.

Barbara Lelky Life in Old Louisiana Feb. 18, 1948

- "1. A packet boat is a boat which things are packed.
- 2. A plantation home is usually very big and pretty. The man who owns the home is called Master by the people who work there.
- 3. A duel is a long ride.
- 4. A slave market is a place where slaves are sold to the person who makes the highest bid.
- 5. - - -
- 6. Tobacco and corn.

Barbara R. Lelky Life in Old Louisiana Feb. 19, 1948

- "1. A packet boat is a boat that carrys people and sometimes mail.
- 2. A plantation home is usally very big and pretty. There are different rooms and maids and bulters.
- 3. A duel is a fight that is planned before time.
- 4. A slave market is a place were slaves are sold.
- 5. A Creole is a native of Louisiana.
- 6. The two crops are cotton and cane.

Richard Life in Old Louisiana Feb. 18, 1948

- "1. - - -
- 2. - - -
- 3. - - -
- 4. A slave market is a place were they sell natives.
- 5. - - -
- 6. - - -

Richard

Feb. 19, 1948

- "1. A packet boat is an old boat with a big wheel in the back.
2. A plantation home is very common in the South.
3. A duel is sword fight.
4. A slave market is a place where they sell natives.
5. A Creole is French person.
6. Sugar cane and cotton."

In this project, when the motion picture film was compared with some other mode of presentation the material of the parallel exercises was made as nearly alike as possible in content and in organization.

In every case, almost without exception, the visual experiences gave better mental pictures. Even the slowest pupil of the class who experienced great difficulty in reading, as Robert, learned a great deal about the work of the forest ranger in the film shown May 12th, called "The Forest Ranger". Frances, the most capable pupil of the class, expressed these mental pictures in a more correct way, but Robert got the general idea of the work of the forest ranger also.

The writer will give these two papers as they were written by these two pupils after viewing this film:

Robert

The Forest Ranger

May 12, 1948

"Forest rangers are good helpers to the forest. He helps trees, he sees that the grass is not stamped on by cattle. The forest ranger says that cattle can not graze on grass but only 2 days. He plans about the forest. He tells when there is a fire, or a snow storm coming. They help lost people. Forest rangers chop down trees and they know all about trees and they know how to take care of the forest. Early in the spring they inspect trees. If there are bugs in a tree they chop down the tree and chop off the bark. Early in the spring they drill a hole in the tree and they pull out a piece of wood if the wood is old enough to chop down. They chop down the tree."

Frances

The Forest Ranger

May 12, 1948

"The Forest Rangers have many duties. Some of these duties are done in the summer. These duties are replanting trees. Helping ranchmen with their sheep and cattle. Repairing the ranchmen's home and keeping watch day and night for fires. Rangers also mark trees. If the rangers think the trees are ready to cut they mark them at the top and the bottom. Rangers burn the trees that have insects of them. This is to keep the insects from spreading and killing other trees.

The duties of the Rangers in the winter is mostly to make plans and weather reports. The Rangers walk in the snow high into the mountains to see how much water the farmers will have for their land in the summer. If anyone gets lost in the snow the Rangers find them. Rangers also protect wild life. They see that no animals are killed out of season. If there is not food enough to feed the animals hunters are aloud to kill one deer or any other animals. But only one of all the animals.

The forest rangers are men to be proud of. Their job is very hard. It would be easier if you would help to see that fires are not started by your camp fire on your vacation."

It was interesting to note that the class made the greatest progress in Social Studies during the year. The Metropolitan Achievement Test, Intermediate Battery, Form R, was given on November 19, 1947. The "S" Form was given on May 17, 1948, five months later. History and Geography were scored separately, and the average of the two taken for average Social Studies. The two tests compared as follows:

	<u>November 19, 1947</u>	<u>May 17, 1948</u>
Highest	7.7	8.6
Lowest	3.4	4.6
Medium	4.3	5.6

The gain shown in the five months period in the various subjects for the class was:

Reading	.6
Vocabulary	.5
Arithmetic	.4
Science	.3
Social Studies	1.3

and the effect of the intervention on the ergonomics of the workstations. The results showed that the intervention was successful in reducing the physical load on the upper limb and the musculoskeletal symptoms. The intervention was also successful in reducing the physical load on the lower limb and the musculoskeletal symptoms. The intervention was also successful in reducing the physical load on the trunk and the musculoskeletal symptoms.

The results of the study suggest that the intervention was successful in reducing the physical load on the upper limb and the musculoskeletal symptoms. The intervention was also successful in reducing the physical load on the lower limb and the musculoskeletal symptoms. The intervention was also successful in reducing the physical load on the trunk and the musculoskeletal symptoms.

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Since audio-visual aids in the learning process had been stressed in the Social Studies, the greatest per cent of improvement, as shown by the two tests, proved their benefit to these Latin American children. They progressed twelve months in knowledge within the five month period in the field of Social Studies.

the first part of the sentence, and then the second part
of the sentence, and then the third part, and so on. This
is called "recursion". The reason why this is called
recursion is because it is recursive. It is recursive
because it is based on the previous part of the sentence.

RECURSION







